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Feasibility study for the development of a biosphere reserve in Kakheti, Georgia

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Feasibility study for the development of a biosphere reserve in Kakheti, Georgia

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Cover pictures: small scale agriculture in Tusheti (top left), Alazani river floodplain (top left), winter pasture farm in Vashlovani (bottom left), village with ancient defence towers in Tusheti (bottomright,)

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Abbreviations

| | |
|----------|---|
| ADA | Austrian Development Agency |
| APA | Agency of Protected Areas in Georgia |
| BR | Biosphere Reserve |
| CBO | Community Based Organisations |
| CENN | Caucasus Environmental NGO Network |
| CNF | Caucasus Nature Fund |
| CDA | Czech Development Agency |
| CWR | Crop wild relative |
| ECP | Ecoregion Conservation Plan Caucasus |
| EIA | Environmental impact assessment |
| ELKANA | Biological Farming Association, NGO |
| EU | European Union |
| FoPA | Friends of Protected Areas |
| FoTPA | Friends of Tusheti Protected Areas |
| FoVPA | Friends of Vashlovani Protected Areas |
| FPS | Forest Policy Service |
| FFI | Fauna and Flora International |
| GA | Green Alternative |
| GEL | Georgian Lari (currency) |
| GEOSTAT | National Statistics Office of Georgia |
| GIZ IBiS | GIZ Programme on Integrated Biodiversity Management in the South Caucasus |
| GM | Green Movement |
| GP | Georgian Parliament |
| ha | hectares |
| IBA | Important bird area |
| ICC | International Coordinating Council (of the MAB Programme of UNESCO) |
| IECP | Integrated Erosion Control in Mountainous Areas of South Caucasus (GIZ) |
| IKI | International Climate Initiative (IKI) of the German Federal Government |
| IUCN | International Union for Nature Conservation |
| KBA | Key biodiversity area |
| KfW | Kreditanstalt für Wiederaufbau |
| LB | Local Business |
| LG | Local Government of affected municipalities and region |
| LP | Local Population of affected municipalities |
| MAB | Man and Biosphere (Programme of UNESCO) |

| | |
|----------|--|
| m a.s.l. | meters above sea level |
| MAP | Madrid Action Plan (within MAB Programme) |
| MARISCO | Method for adaptive management of vulnerability and risk at conservation sites |
| MC | Mercy Corps |
| MDF | Municipal Development Fund |
| MoA | Ministry of Agriculture |
| MoC | Ministry of Culture |
| MoE | Ministry of Agriculture |
| MoENRP | Ministry of Environment and Natural Resource Protection |
| MoES | Ministry of Education and Science |
| MoESD | Ministry of Economy and Sustainable Development |
| MRDI | Ministry of Regional Development and Infrastructure |
| NACRES | Centre for Biodiversity Conservation & Research, NGO |
| NBSAP | National Biodiversity Strategy and Action Plan of Georgia |
| NESD | National Environmental Supervision Department |
| NFA | National Forest Agency |
| NGO | Non-Governmental Organisation |
| NP | National Park |
| NTF | Non-timber forest products |
| PA | Protected Area |
| PCA | Priority conservation area |
| PL | Protected Landscape |
| RECC | Regional Environmental Centre for the Caucasus |
| TJS | Transboundary Joint Secretariat |
| TNP | Tusheti National Park |
| TNR | Tusheti Nature Reserve |
| TPA | Tusheti Protected Areas |
| TPL | Tusheti Protected Landscape |
| USAID | United States Agency for International Development |
| UNDP | United Nations Development Programme |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| UNFCCC | United Nations Framework Convention on Climate Change |
| USFS | United States Forest Service |
| VPA | Vashlovani Protected Areas |
| WB | World Bank |
| WNBR | World Network of Biosphere Reserves |
| WWF | World Wide Fund for Nature |

Executive Summary

(will be compiled after finalisation of the document, thus after commenting by stakeholder and discussion of results and next steps with stakeholder on the national and regional level in July)

I. Introduction

1.1. Background

In summer 2014 a delegation from the Ministry of Environment and Natural Resources Protection (MoENRP) of Georgia came for a study tour to Germany. The aim was to visit different utilised forests and forest protected areas and discuss management and utilisation concepts. A visit of the Minister of Environment of that time followed subsequently, focused on sustainable management of resources, especially within the framework of UNESCO biosphere reserves (BRs).

The concept of UNESCO BRs is a promising instrument to connect conservation and sustainable land use practices. As Georgia is in need of sustainable regional development and is not implementing the UNESCO BR concept up to now, the MoENRP in 2014 developed the wish to establish a BR in Georgia and start an initiative on this.

In the frame of a bilateral cooperation of Germany and Georgia the German Federal Ministry of Environment, Nature Conservation, Building and Nuclear Safety decided to support this initiative and granted funding for the project “Biosphere Reserves as model regions for climate change mitigation and adaptation – a study on potential and feasibility of their designation in Georgia” within the programme “Capacity development for climate policy in the Western Balkans, Central and Eastern Europe and Central Asia, Phase II” of the International Climate Initiative. The project was drafted and is implemented by the Michael Succow Foundation, in cooperation with the Georgian NGO NACRES (Center for Biodiversity Conservation and Research) and the MOENRP of Georgia.

The project started in 2015 with a screening for potentials for BR development in Georgia. Based on interviews and available data eight regions were prioritised and analysed for their potential. In stakeholder consultations on the national level Kakheti was prioritised and considered as most ready at that stage to start the development of a BR based on the following arguments (Hirschelmann 2015):

- Network of different types of well-established and well-accepted protected areas (PAs) in place, especially in Tusheti
- High ethnic and language diversity, including Batsbi language (on UNESCO list of endangered languages)
- Diverse cultural heritage including traditional lifestyles, several UNESCO (tentative) World Heritage Sites
- Strong development of tourism, good potential for ecotourism (in form of nature as well as agricultural tourism)
- District of agriculture: good base for sustainable development (already innovative projects in place), diverse and distinct traditional land use patterns (winemaking, transhumant livestock farming)

- Regional development strategy in place
- Municipalities and PA administration representatives already showed support for BR approach in a workshop on evaluation and development of the region in winter 2014/15 (Ibisch et al. 2015)
- Much international activity, good funding potential (especially GIZ regional programme with focus on sustainable regional development with eco-farming, pasture management, sustainable forestry)
- Several opportunities for transboundary cooperation
- Opportunities for connecting with possible future BRs in adjacent regions like Phsav-Khevsureti and Kazbegi including newly established NPs

The screening report concluded that both Vashlovani and Tusheti region and adjacent areas are prioritised for further investigations and analysis of feasibility for a first BR complex in Georgia (Hirschelmann 2015). Especially the transhumant livestock farming which connects both regions (summer pasture in Tusheti, winter pasture in Vashlovani) represents a traditional and sustainable land



Picture 1: Arguments of stakeholders for a BR in Kakheti, collected during a workshop in Tbilisi in June 2015

use that shapes both regions. It was recommended to include also the transhumance route for some assessments and considerations in the feasibility study.

The feasibility study focusing on the prioritised Kakheti region represents the second step of the project and started in September 2015. The results are drafted in this report, which are based on two field trips, existing data and literature, interviews,

group workshops and stakeholder consultations on the regional and national level.

1.2. Objectives

Many BRs in the World Network of Biosphere Reserves (WNBR) do not meet the UNESCO criteria, especially those designated before 1995. Currently there is an exit strategy to intensify critical periodic reviews and withdraw the BR status from sites which do not meet the criteria (UNESCO 2015b).

In order to make sure to fulfil all UNESCO criteria and to work towards a successful BR nomination from the very beginning, it is important to check on the feasibility of a possible candidate region in detail before starting the development of a BR.

The document at hand analyses the feasibility of Kakheti to become a UNESCO BR, focusing on the areas of Tusheti in Akhmeta municipality and Vashlovani in Dedoplistskaro municipality. The present situation in the target region is analysed and assessed according to the UNESCO concept and criteria (outlined in 3.1), focusing on conservation, sustainable development, research and monitoring.

Thus the feasibility study serves to illustrate which of the criteria can be fulfilled and how they are characterised. It also provides a base for further planning in regard to BR nomination. In the end the study draws a roadmap for the next steps on the way to a BR including recommendations and suggestions for follow-up activities.

Further objectives of the feasibility study are:

- Better understanding of the complex natural, socio-economic and organisational situation
- Follow a systematic approach based on clear UNESCO criteria
- Address potentials and challenges in achieving sustainable regional development and a BR in particular
- Develop context-specific recommendations

1.3. Methodology

The study at hand is based on:

- a) Existing information: available reports and assessments have been compiled and synthesized (see references)
- b) Collection of additional information in interviews and consultations with experts and stakeholder on the national and regional level, in individual and group meetings as well as group workshops from September 2015 to July 2016 (overview of consultations in Annex 3)
- c) Dialogue with stakeholders and relevant authorities as the feasibility of a BR strongly depends on stakeholder views, commitment and concerns in regard to the possible BR



Picture 2: Stakeholder consultation with NGOs and CBOs in Alvani, Akhmeta in February 2016 (Photo: Sophie Hirschelmann)



Picture 4: Working group during stakeholder meeting in Alvani (Photo: Sophie Hirschelmann)



Picture 3: Discussion during stakeholder workshop in Dedoplistskaro (Photo: Sophie Hirschelmann)

The feasibility study is structured in the following way:

- Description of the present situation in the study region, including outlining of problems and positive preconditions in regard to BR development (chapter II)
- Presentation of UNESCO concept, criteria and requirements (chapter 3.1)
- Synthesis of the present situation in the study region and assessment in regard to UNESCO concept (five dimensions of feasibility) including strengths and weaknesses and supporting and hindering factors (chapter 3.2)
- Outline of chances and risks for the region resulting from BR development (chapter 3.2)
- Assessment of feasibility and possible scenarios for a BR in Kakheti (chapter 3.3.)
- General recommendations in regard to BR development in Kakheti and a proposal for next steps and possible follow-up activities

II. Present situation in the study region

2.1. Definition of the study region

The study region of this feasibility study lies within the region of Kakheti in eastern Georgia. Kakheti as the largest region of Georgia covers an area of around 11,300 km² and is subdivided into 8 municipalities.

The focus of this study, defined in the study of the “Country-wide screening on potential for biosphere reserve development in Georgia” (Michael Succow Foundation 2015), lies on Tusheti and Vashlovani region (PAs and their surroundings) which are considered for a first BR complex in Georgia. In addition, a possible connecting corridor between both regions is being described and discussed.

Tusheti in the north of Kakheti bordering with Russia is an area mainly located at the northern slopes of the Greater Caucasus characterised by high mountain ranges with meadows and forests, fully covered by different types of PAs (see map in Figure 1). Vashlovani in the southeast of Kakheti is a lowland area on the border to Azerbaijan covered by steppes, semi-deserts and light forests.

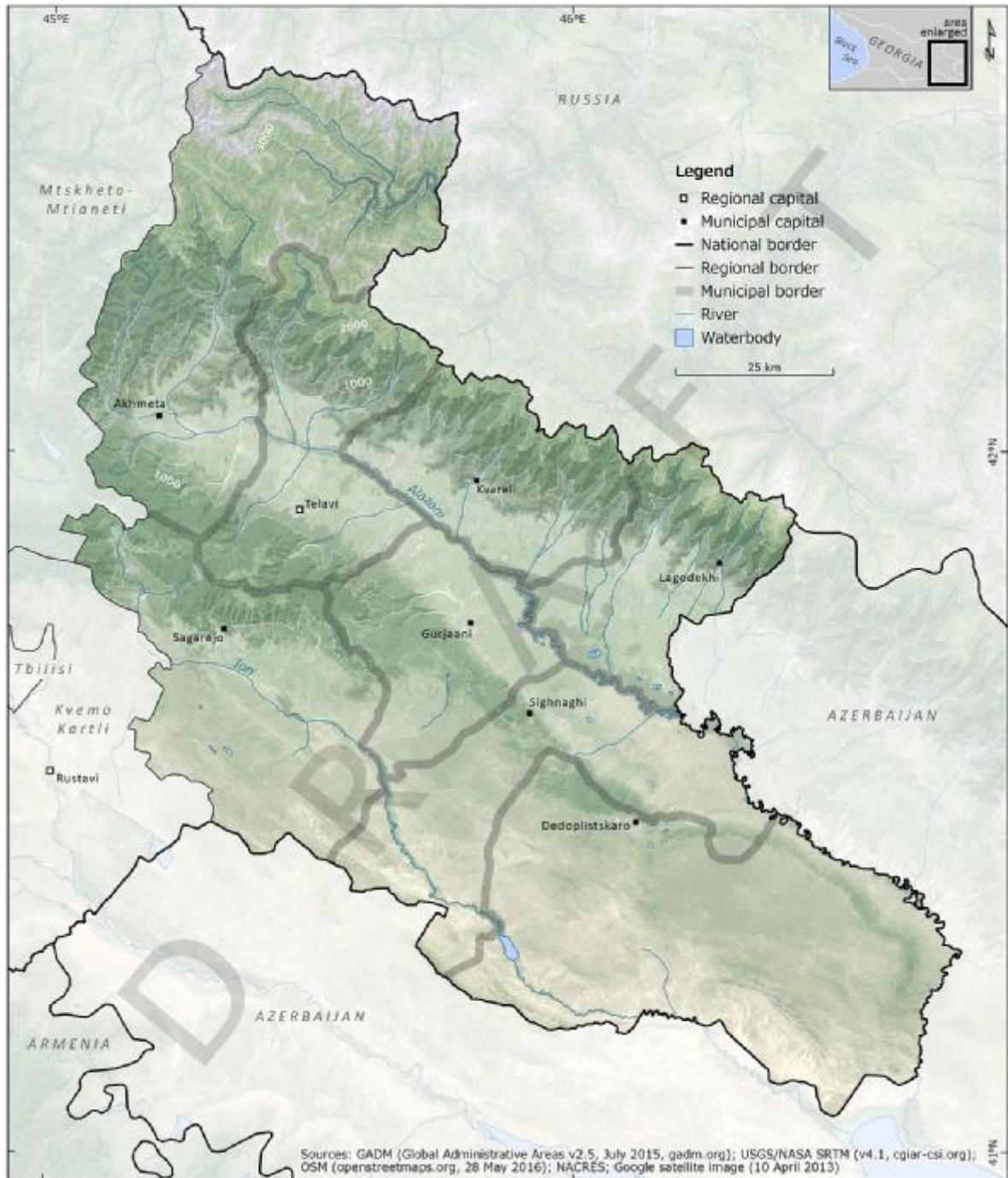


Figure 1: Map of broader study region (by Stephan Busse)

2.2. Nature and biodiversity conservation

Kakheti covers a wide range of landscapes as it stretches from the Greater Caucasus Mountains of Tusheti in the north down to the Alazani valley to the steppes and semi-arid lowlands of Vashlovani in the south-east. Several interlinked ecosystems are encompassed (see Figure 2) (Ibisch et al. 2015):

1. Alpine and subalpine ecosystems in the high mountain areas of Tusheti with forests, meadows, rock outcrops (mainly northern slopes of the Greater Caucasus Mountains)
2. Montane forests of the Greater Caucasus southern slopes
3. Floodplain of the Alazani River and contributing rivers
4. Colline forests, shrublands and agro-ecosystems south of the Gombori range (especially beech forests)
5. Intensively cultivated agro-ecosystems of the Dedoplistskaro region
6. Vashlovani badlands landscape with Juniper and Pistachio forests and shrublands
7. Semi-desert landscape along the south-eastern border to Azerbaijan

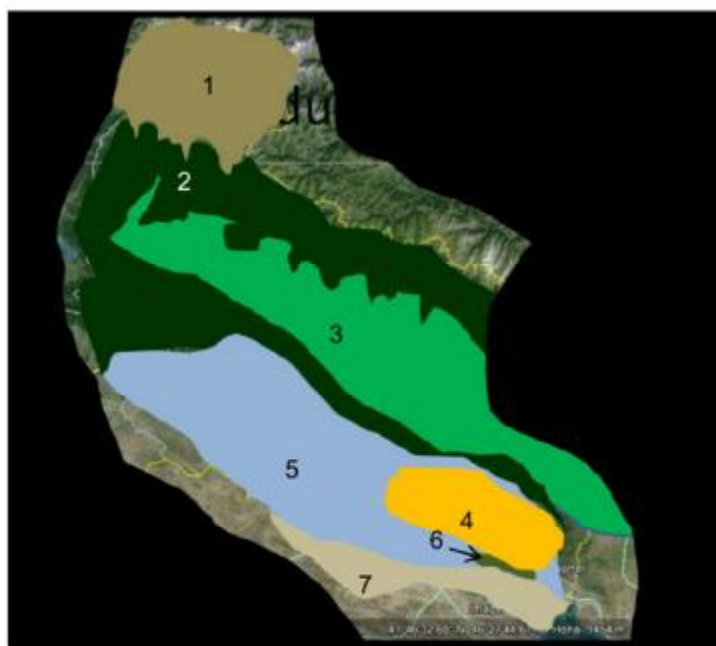


Figure 2: Schematic ecosystem overview for Kakheti (Source: Ibisch et al. 2015)

Kakheti also encompasses a big share of the PAs of Georgia to conserve biodiversity and protect natural as well as cultural landscapes (see Figure 3):

- Tusheti Protected Areas (including Tusheti Strict Nature Reserve and National Park, also Tusheti Protected Landscape managed by the municipality of Akhmeta)
- Vashlovani Protected Areas (including Vashlovani Strict Nature Reserve, National Park and three Natural Monuments – Eagle Gorge, Takhti-Tepa Mud Volcanoes and Kaklisyure Alazani floodplain forest)

- Lagodekhi Protected Areas (Lagodekhi Strict Nature Reserve and Lagodekhi Managed Reserve) with beech-hornbeam forests, mixed deciduous forests, subalpine and alpine grasslands
- Batsara-Babaneuri Protected Areas (including Batsara-Babaneuri Strict Nature Reserve and Ilto Managed Reserve) with several patches to protect Red List and relict species of trees in Batsara (*Taxus baccata*) and Babaneuri Strict Reserves (*Zelkova carpinifolia*), and to restore natural forests and characteristic fauna (Ilto managed reserve)
- Chachuna Managed Reserve) with arid and semi-arid landscapes as well as remnants of floodplain forests
- Mariamjvari Protected Areas (including Mariamjvari Strict Nature Reserve, Korugi Managed Reserve and Iori Managed Reserve) to protect, among others, landscapes of relict Sosnovski pine (*Pinus sosnowsky*)

Other parts of Kakheti such as the Alazani floodplain and the Gombori mountain ridge have been considered for the establishment of PAs in the past but have not been put under any protection status. For the Alazani floodplain forest there had been done intensive conservation planning work in 2005 for the establishment of a multiple use area (PA category six), which has never been implemented. (Georgia's Protected Areas Programme 2005).

As the focus areas of this study are Vashlovani and Tusheti region and a possible corridor, especially their natural and biodiversity characteristics are presented in this chapter. In addition for consideration of a possible corridor the Alazani floodplain is presented in the same regard.

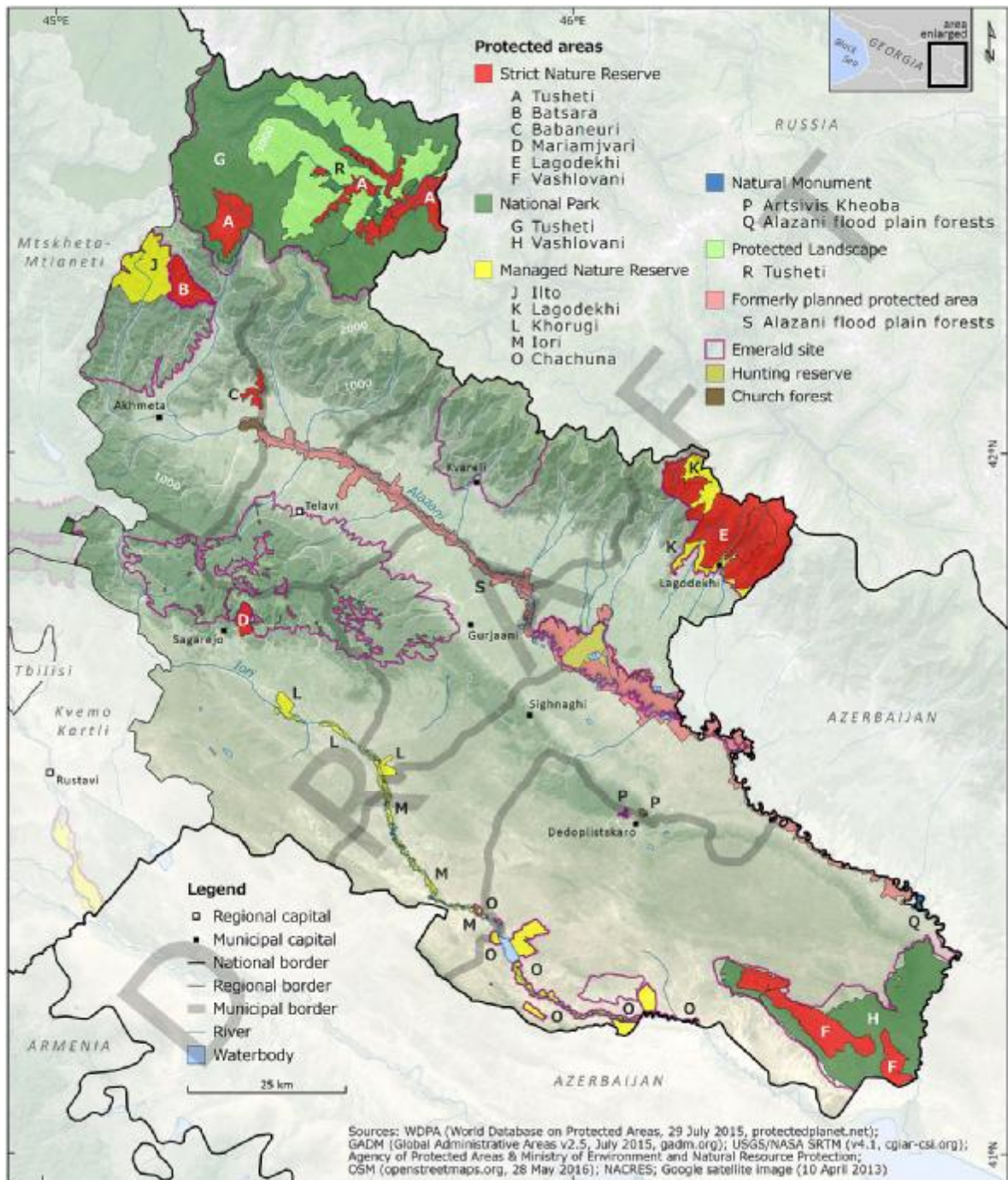


Figure 3: Protected areas in Kakheti (including formerly planned PAs, potential sites in the Emerald Network of Georgia and other sites relevant for conservation), Map: Stephan Busse

2.2.1. Tusheti

Physical and climatic site conditions and potential impacts of climate change

Tusheti is located in Akhmeta municipality between the main Caucasus range and the Pirikita range, a side range of the Greater Caucasus. The northern and eastern boundaries of Tusheti coincide with the national border with Russian Federation. South from it lies the rest of the region of Kakheti and from the west it is bordered by the region of Mtskheta-Mtianeti and the new national park of Pshav-Khevsureti, where the borderline crosses mount Tebulo.

The elevation ranges from 1,590 m a.s.l. (Pirikita Alazani riverbed near the Daghestan border, Russian Federation) to 4,493 m a.s.l. (mount Tebulo). Physically the region represents a depression comprised of two valleys, the basins of the Pirikita Alazani and the Gometsari Alazani. The two Alazanis converge at Omalo plateau at 1,600 m a.s.l. Both Alazani rivers have several major tributaries. There are also numerous small rivers, streams and springs. Small lakes of various origin, natural mineral water sources and highland marshes are found throughout Tusheti.

The geomorphology of Tusheti is described as a mixture of wrinkle ridges and a massif formed in the Meso-Cenozoic and is further defined by sedimentary rocks and a denudation relief formed by river erosion and past glaciations. Glacier U-shaped valleys, theatres and morenic deposits are evident. The two main gorges - the Pirikita and the Gometsari - as well as the Makratela range are composed of Jurassic sedentary rock, mainly slates (CENN/ITC 2012).

The region is characterized by a temperate humid climate, with relatively dry and cold winters and short summers. Continental climate dominates the eastern parts of Tusheti. However, local conditions significantly vary from location to location depending on topography and altitude. The average annual temperature is 3.5°C. The average temperature of January is - 9.1°C and of August 14.2°C. The absolute maximum is 31°C and the absolute minimum is - 36°C. The annual mean precipitation is 748 mm. Most of the precipitation occurs during the warmest period of the year, April to September.

In the frame of climate change, Tusheti is likely to be threatened especially due to more heavy storms and rainfalls may occur that lead to increased erosion and landslides. As in most high mountain regions, climate change can primarily and directly affect the glaciers and thus the watercourses and connected vegetation that depend on them. With almost 3,000 meter-altitudinal gradient Tusheti's vegetation has distinct vertical distribution patterns and some of them are adapted to relatively narrow altitudinal bands. In the long run these patterns are likely to undergo major shifts because of changes in climate. High altitude plant communities such as subnival plant complexes, which include many endemic species and genera, are likely to become threatened with extinction as less space will be available for them. Lower altitude communities are likely to move upwards, perhaps replacing the existing plant communities. Wildlife is also likely to be heavily influenced. For example, the East Caucasian tur (*Capra cylindricornis*), a Caucasian endemic ungulate, may be affected by the loss of glaciers, which is an important element of tur habitat.

Biological diversity and its significance at national and regional level

Tusheti is one of the richest regions of Georgia in respect of flora and vegetation. There are more than 1,000 vascular plant species from about 90 families. This means that one fourth of Georgia's flora species and one sixth of all Caucasian plants are found in Tusheti. The vegetation cover includes montane forests dominated by birch and Pine (*Pinus kochiana*), subalpine forest, alpine and subalpine meadows, subalpine shrub (mainly *Rhododendron caucasicum*), sub-nival vegetation and scree vegetation complexes. Each of these vegetation classes is in turn represented by numerous variants differing in structure and species composition.

The flora of Tusheti includes numerous rare species of which four are included in the Georgian Red List. In addition, there are plant species that are regionally rare. These include species that are found in the Caucasus in isolation from their main global range.

The level of endemism (proportion of endemic species) is especially high among the flora. According to some estimates, at least 20% of all plant species found in Tusheti is Georgian or Caucasian endemic. At least 8 of them are believed to be extremely rare: *Allium albovianum*, *Erysimum subnivale*, *Ficaria calthifolia*, *Galeopsis nana*, *Jurinea exuberans*, *Pimpinella aromatica*, *Rosa irysthonica*, *Tragopogon otschiaurii*.

The mammalian fauna is also diverse. A total of 32 mammal species have been recorded in Tusheti. The ungulate community is particularly noteworthy. It includes bezoar (wild) goat (*Capra aegagrus*), the Caucasian endemic East Caucasian tur (*Capra cylindricornis*), chamois (*Rupicapra rupicapra*), roe deer (*Capreolus capreolus*), red deer (*Cervus elaphus*) and wild boar (*Sus scrofa*). It is important to note that the Tusheti bezoar population is the only more or less viable population of this species in Georgia. The region is also rich in large carnivores. There are the wolf (*Canis lupus*), lynx (*Lynx lynx*) and possibly also Caucasian leopard (*Panthera pardus ciscaucasica*). Among small mammals there are such endemic species as the Caucasus pine vole (*Microtus daghestanicus*), Caucasian snow vole (*Chionomys gud*), Radde's shrew (*Sorex raddei*), and the Caucasian pygmy shrew (*Sorex volnuchini*).

According to available data, there are a total of 90 bird species in Tusheti. Of primary importance are the Caucasian endemics: Caucasian black grouse (*Tetrao mlkosiewiczzi*) and Caucasian snowcock (*Tetraogallus caucasicus*). There are six species from the Georgian Red List, among them the black Vulture (*Aegypius monachus*) is globally threatened and is included in the IUCN Red List as Near Threatened (NT). Large birds of prey such as the bearded vulture (*Gypaetus barbatus*), griffon vulture (*Gyps fulvus*), goshawk (*Accipiter gentilis*), sparrowhawk (*Accipiter nisus*), kestrel (*Falco tinnunculus*), golden eagle (*Aquila chrysaetos*) as well as the mentioned black vulture are common in Tusheti. Tusheti also has many bird species that are important for international birdwatching. In addition to the mentioned Caucasian black grouse and Caucasian snowcock, these include the Caucasian chiffchaff (*Phylloscopus lorenzii*), green warbler (*Phylloscopus nitidus*), red-fronted serin (*Serinus pusillus*), and the great rosefinch (*Carpodacus rubicilla*).

While information is extremely scarce on invertebrates, the globally rare mountain apollo (*Parnassius apollo*) and the endangered endemic Caucasian apollo (*Parnassius nordmanni*) have been recorded in Tusheti.

Tusheti is also rich in domestic plant and animal species. The region is the site of origin of three endemic breeds: Tushetian horse, Tushetian sheep and Georgian sheepdog, as well as of several endemic domestic plant varieties such as the endemic barley "Kershveli". Due to its morphological and other characteristics this variety is a valuable component of Georgia's agro-biodiversity.

The PAs of Tusheti are one of the candidate sites for the country's emerald network of nature protection areas to conserve wild flora and fauna and their natural habitats of Europe (Habitats Directive). It was launched in 1998 by the Council of Europe as part of its work under the Convention on the Conservation of European Wildlife and Natural Habitats or Bern Convention.

Extent, condition and current management of important natural resources within the PA

The Tusheti protected areas (TPA) covering an area of around 113,700 ha consists of three categories of PAs including:

- Tusheti Nature Reserve (TNR) - IUCN Category I
- Tusheti National Park (TNP) - IUCN Category II
- Tusheti Protected Landscape (TPL) - IUCN Category V

The management of TPA is the responsibility of two separate government entities. TSR and TNP are managed by the Agency for PAs (APA), a legal entity of public law and its territorial unit – the administration of Tusheti PA. TPL is managed by the Municipal government of Akhmeta through its territorial unit.

Sheep farming is the most widespread agricultural activity in Tusheti. Grazing takes place in TPL as well as in the traditional use zone of TNP. The present-day sheep farming is entirely based on a transhumant system. Tushetian sheep herders use high mountain graze lands in Tusheti as summer pastures and migrate to the lowlands (Shiraki and Vashlovani in the south-east of Kakheti) in winter. The grazing system entirely depends on natural pastures for feeding the sheep. The grazing pattern showing distinct seasonality is believed to originate in 17th century. Until 1950's Tushetians still retained their traditional lifestyle - while engaged in transhumant sheep farming, other livestock and agricultural activities were maintained in Tusheti and there was a permanent human population in the region. The traditional land use strictly followed a vertical zoning. All land was divided into zones with different agricultural purposes. Plot rotation schemes were also widely applied. These patterns of land use ensured soil maintenance and sustainable use of both cultivated and grazed lands. In order to satisfy local needs vast areas in upper forest and subalpine zones had been cleared of forest and used for crop production. These were the areas where the climate and soils as well as relief forms were most suitable for crop growing.

The traditional grazing system was abandoned in 1960s because the soviet economy demanded maximisation of sheep production, neglecting local traditions and ecological conditions. Formerly cultivated areas were transformed into grazing lands on which new vegetation has been developing

under constant pressure of grazing. As a result large proportions of land in the upper forest zone (1,800-1,900 m a.s.l.) and on southern slopes of the subalpine zone have become secondary meadows with limited productivity. The original zoning of pasturelands and pasture rotation schemes were abandoned causing serious deterioration of pastures. At present land degradation is particularly evident in the plots previously used for crops production but presently used for livestock grazing. Eventually major shifts occurred in the Tush lifestyle – crop production was completely abandoned and all Tush switched to a transhumant lifestyle spending the winter season in the lowlands and only returning to Tusheti for the summer. Currently no pasture management and planning are in place in Tusheti and data on livestock and pasture use is very limited.

In the past hunting was an important source of food but it also had cultural importance. All hunting was strictly regulated by rules and restrictions. Traditional hunting was a perfect example of sustainable use of biological resources. Presently this practice as well as the rules defining its sustainability is forgotten.

The phenomenon of sacred forest is still found in Tusheti and elsewhere in the high mountains of Georgia. In fact, these are “reserves” created and protected due to religious considerations and represent an example of effective protection and sustainable use of forest resources. Sacred forests are almost intact forest stands often distinguished by high aesthetic value and rich biodiversity. Sacred forests may also represent an example of local forest where major human influence was absent completely or over a long period of time.

At present the local population use biological resources including fuel wood, timber, mushrooms, berries, herbs, fish etc. apparently in very small quantities and only for self-consumption. These natural resources make up only an insignificant share of their incomes. Timber (fuel wood, construction timber) is mainly collected from the protected landscape. Fuel wood is the main resource for cooking and heating.

Existing threats to biodiversity and natural resources, root causes and impacts

The diversity and the distribution patterns of flora and fauna in Tusheti are shaped by both historical and current environmental conditions and past and present anthropogenic pressures. Livestock grazing is one of the human activities that had an important (if not decisive) role in shaping up the Tusheti landscapes. While recognizing the ecological role of livestock grazing, it is also one of the threats that in certain areas evidently causes land degradation and depletion of natural plant communities. While remote areas in higher altitudes are not grazed anymore, overgrazing by sheep is taking place in formerly cultivated lands, around villages and other areas which has partly caused serious degradation (Abberger et al. 2015) (e.g. Tsaro ruins in Tsovata, the slope between Kumelaurta and Omalo show almost irreversible erosion). The lack of data on the status of Tusheti pastures and that of a pasture management plan are important gaps for the sustainable use of the pasture on both TNP and TPL.

Livestock grazing has direct as well as indirect impacts on wildlife and the spatial distribution of certain species – some species are forced to use less favourable higher altitude areas to escape the disturbance associated with sheep grazing such as competition, sheep dogs, human presence.

Illegal hunting is another important threat that affects such species as tur, wild goat, bear etc. The actual level of poaching is unknown due to the lack of official data – no cases of poaching have been officially filed by the administration of TPA since its establishment in 2005. Nevertheless, the overall situation for illegal hunting has evidently improved over this period as suggested by the fact that the range and numbers of wild goats have increased and red deer, which were considered almost extinct in Tusheti, seem to come back. Despite claims of the TPA administration and certain local groups saying that Tushetians no longer hunt in Tusheti, illegal hunting does seem to occur in Tusheti as suggested by anecdotal information. It is also important to note that no opportunity of legal hunting has been given in Tusheti after the establishment of TPA and the introduction of new hunting regulations in 1995.

Despite being completely illegal, fishing takes place almost in all rivers of Tusheti. The river trout is on the Georgian Red List and fishing for them is illegal regardless method or purpose. However, the use of illegal methods such as electrofishing poses a great threat to the Tusheti river trout population.

Clearing forest for agriculture was another important human activity that created the Tusheti landscape in its current form. According to some accounts illegal logging has decreased in TNP and TNR in recent years. The recent reclassification of certain sections of the nature reserve (where no tree cutting or fuel wood collection is allowed) has had a positive effect. But more is needed to be done to achieve an effective spatial planning and resource use management in TNP and TNR as well as a good balance between local needs and conservation goals. It is also important to note that no up-to-date information is available on the status or carrying capacity of the Tusheti forests – the last forest inventory in Tusheti was conducted 30 years ago.

Forest fires represent another serious threat to TPA. At least some fires are believed to be caused by natural factors. Hence the situation may aggravate as a result of climate change. Increase in tourist inflow may also contribute to the risk of fires.

It is currently not known if tourism poses a serious threat to the wildlife and habitats in Tusheti. But with the steadily growing number of visitor, it may soon become one. Waste, which is primarily associated with tourism, seems to be a serious issue already. No effective waste management activities are presently implemented. In recent years motor bike tours have become popular in Tusheti. Local people and conservations believe that this form of tourism is not compatible with Tusheti's natural and cultural heritage objectives.

Both TNP/TNR and TPL have valid management plans. TPA also has a law enforcement strategy. Despite some improvements in both TNP/TNR and TPL administrations, the local law enforcement capabilities are extremely limited. While the lack of rangers and necessary resources are officially named as the main causes for weak law enforcement, other reasons may also be present such as lack of motivation, individual capacities and ineffective use of available resources.

A number of trainings have been conducted in biodiversity monitoring and conservation, but due to fast rotation of personnel not much knowledge has been accumulated in TPA administration. In general, staff recruitment is a problem for the administration. Main causes are low salaries and a lack of good living conditions in the mountains. Therefore it is very difficult to find motivated young people and even more difficult to keep them long-term.

Adjacent territories

Only the area bordering TPA in the south is considered within this feasibility study. The Kakhetian municipalities of Akhmeta (to which TPA belongs) and Telavi are located there. The steep slopes on the way from Tusheti down to the lowlands of Akhmeta and Telavi municipalities are southern slopes of the Greater Caucasus Mountains and are covered by montane broad-leaf forests dominated by oak and hornbeam in lower elevations up to 1000 m a.s.l. and oriental beech in higher elevations, enriched by lime trees, elms and different maple species in the upper parts. Grazing, beekeeping and forestry in lower elevations are the main natural resource uses here. More settlements can be found in the Pankisi gorge from where the Batsara and Ilto Reserves can be reached. The lowlands in the Alazani plain of Akhmeta and Telavi are dominated by settlements, pastures and fields.

2.2.2. Vashlovani

Physical and climatic site conditions

The Vashlovani Protected Areas (VPA) are situated in the Dedoplistskaro municipality of Kakheti in the extreme south-eastern parts of the country bordering with Azerbaijan. The PAs include (see map):

- Vashlovani Strict Nature Reserve
- Vashlovani National Park
- Three natural monuments: Artsivi (Eagle) canyon, Takhti Tepa mud volcano, and Alazani flood plain

The total area of VPA is 35,053.7 ha. The elevation ranges from 95 to 845 m a.s.l.

VPA are characterised with varying climatic and geomorphological conditions, and diverse soils. The geological structure is characterized by complex marine and continental sediments of the tertiary system. The area is very prone to weathering, due to which it features diverse geomorphology with a mosaic of rugged and relatively flat terrain with planes, dry gullies, hills, badlands, river terraces, narrow ravines, pseudo-karst and erosion remnants.

The area is poor in hydrological network; the numerous dry ravines and old river beds are mainly fed by rainwater or ground water and remain dry for most of the year. Major watercourses are the Alazani and Mlshetskali rivers. Several brackish water sources are found throughout Vashlovani. But they do not create permanent flow on the surface and typically disappear under the sandy beds of ravines

within a few meters from the origin, but continue flowing underground, sustaining rich riparian vegetation.

The area has a dry sub-tropical climate with hot summers with an average temperature of 24°C in July. The average annual temperature is 13°-14°C. The winter is typically cold with an average temperature of 0°C in January; the absolute minimum is -20°C. Annual precipitation increases with elevation and varies from 250 mm (in Eldari lowland) to 500 mm (at Black mountain). The seasonal distribution of precipitation is characterized with two maximums in spring and autumn, and two minimums in summer and winter.

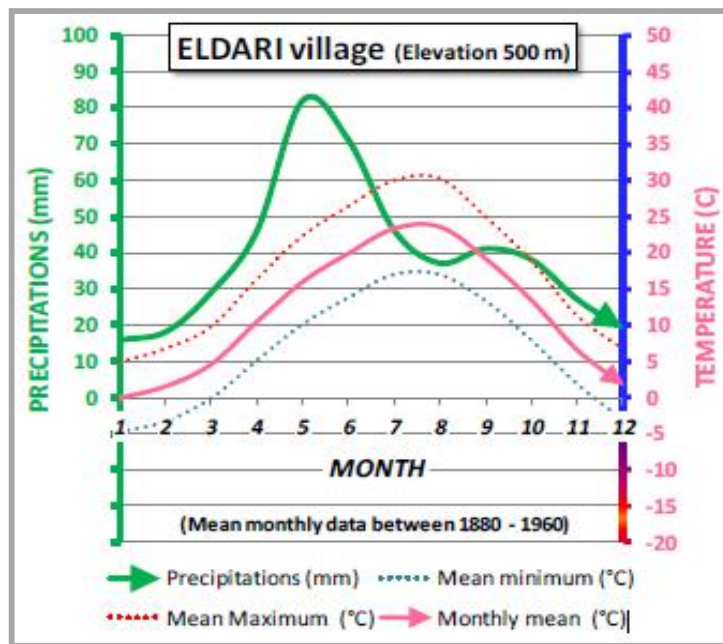


Figure 4: Precipitation and temperature diagram from Eldari village weather station (taken from Gintzburger et al. 2012)

Potential impacts of climate change

According to Georgia's Third National Communication to the UNFCCC (Ministry of Environment and Natural Resources Protection 2015) there is a noticeable trend of change in mean annual air temperature and mean annual sums of precipitation in Dedoplistskaro region. The average annual temperature in Dedoplistskaro increased by 0.7°C between the periods 1961-1985 and 1986-2010, and by 1.2°C between the periods of 1951-1960 and 1986-2010. The maximum increase in temperature was observed during July-October, accompanied by a slight decrease in the temperature in winter. The annual total precipitation decreased within the mentioned periods.

The area is believed to be very vulnerable to climate change and desertification due to its climatic and geographical conditions such as dry climate, droughts, strong winds, weakly developed hydrological network and susceptibility to erosion. Rising temperature and decreasing precipitation threatens water availability to both wild animals and livestock. An increase of temperature and a reduction and more

uneven distribution of precipitation may result in longer periods of drought (see scenarios in Figure 5).

| Region | Season | Spring | | Summer | | Autumn | | Winter | | Annual | | |
|-----------------|-----------------------------|-----------|------|--------|------|--------|------|--------|------|--------|------|-------|
| | | Parameter | T °C | Q mm | T °C | Q mm | T °C | Q mm | T °C | Q mm | T °C | Q mm |
| Western Georgia | Baseline period | | 7.9 | 281 | 18.5 | 348 | 9.7 | 391 | -2.3 | 377 | 9.1 | 1197 |
| | Anticipated change Δ | | 4.6 | -40 | 5.6 | -88 | 3.4 | -52.7 | 3.6 | 104 | 3.5 | -70.0 |
| | 2100 | | 12.4 | 241 | 24.1 | 260 | 13.0 | 338 | 1.4 | 481 | 12.6 | 1127 |
| Eastern Georgia | Baseline period | | 9.3 | 158 | 20.5 | 170 | 11.6 | 126 | 1.0 | 85 | 11.3 | 570 |
| | Anticipated change Δ | | 4.6 | -65 | 5.9 | -72 | 4.1 | -45 | 4.5 | -289 | 4.1 | -83 |
| | 2100 | | 13.9 | 93 | 26.4 | 98 | 15.7 | 81 | 5.5 | 56 | 15.4 | 487 |

Figure 5: Anticipated temperature and precipitation scenarios for eastern and western Georgia (Integrated Natural Resources Management in Watersheds of Georgia Program 2015)

Biological diversity and its significance at national and regional level

VPA feature a remarkable diversity of plant communities. The most common plant communities include: lowland and foothill deserts, phrygana-like vegetation, steppe, shibliak-like hemixerophilous scrubland, light woodlands dominated by pistachio and juniper trees, and foothill deciduous forest. There are also patches of flood plain forest and hygrophilous vegetation.

Out of 600 plant species recorded in VPA, 28 are Caucasian endemics (e.g. *Berberis iberica*, *Pyrus gorgica*, *Tulipa eichleri*, *Iris iberica* etc) and 5 species are Georgian endemics (such as *Campanula kachetica*, *Onobrychis kachetica*, *Paeonia tenuifolia*, *Pyrus sachokiana*). A total of 13 plant species from the Georgian red list are found in VPA.

The fauna of VPA includes a remarkable diversity of reptiles with as many as 25-30 recorded species (according to different accounts). The raptor and carnivore diversity is also noteworthy. All large carnivores that are found in the Caucasus are also present in Vashlovani including wolf, bear, lynx, golden jackal and till recently at least one individual of Persian leopard was also present. VPA are also sites of the on-going reintroduction programme for the goitered gazelle (*Gazella subgutturosa*), a species that has been extinct in Georgia for many decades.

VPA is one of the candidate sites for the country's emerald network of nature protection areas to conserve wild flora and fauna and their natural habitats of Europe. As a part of the semi-arid zone of Georgia, VPA lies within the Iori Region Important Bird Area (IBA GE011). The IBA is important for breeding and wintering birds of prey (25 species recorded) and the steppe bird assemblage.

Extent, condition and current management of important natural resources within the PA

VPA is managed by the VPA administration, which is a territorial entity of the APA. There is very limited use of natural resources in VPA and it is confined to the traditional use zone (16,553 ha) of

the national park. Permitted activities include livestock grazing and the collection of dead wood for fire wood by livestock herders. The area represents traditional winter pastures that are mainly used by Tush herders. The area is divided in 48 relatively small pasture units, which are leased to livestock owners. Around 33,000 sheep units (all livestock expressed in sheep numbers) use these pastures each winter. In most cases grazing occurs from mid-November to mid-April, only one farm remains in Vashlovani year round. At present almost no pasture or livestock grazing management is conducted, which is expected to change soon, as the VPA pasture management plan is now finalised and waiting to be adopted which was developed within the EU-UNDP project “Sustainable Management of Pastures in Georgia”, implemented in Vashlovani. In addition to dead wood, livestock farmers have access to water holes.

Sport fishing (on the Alazani River) and collection of berries and mushrooms are also allowed in VNP. In 2007, 180 ha of the national park territory (Shavi Mta monastery and its surroundings) and 4 ha of Eagle canyon natural monument (a section at Khornabuji castle) were transferred to the Georgian Orthodox Church with a special agreement for a period of 20 years. Currently no management activities are implemented by the Church on these territories.

Existing threats to biodiversity and natural resources, root causes and impacts

VPA landscapes have been strongly shaped during centuries of livestock grazing and this factor still appears to play an important role in maintaining the mosaic of habitats in Vashlovani. Recognizing this and traditional rights claimed by the local livestock herders, livestock grazing is allowed on the pastures within the traditional use zone of VNP. Nevertheless, livestock grazing will also remain a major threat to Vashlovani grassland ecosystems as no effective monitoring and management is in place yet. In addition to direct influence such as overgrazing and subsequent erosion, human presence as well as livestock guarding dogs cause disturbance to wildlife and result in uncontrolled fires, illegal logging, waste-related problems and human-wildlife conflicts. Even illegal hunting is often facilitated because local farms are sometimes used by poachers as a base camp. There are also sites that are especially degraded mainly due to seasonal (to/from summer pastures) and daily (to/from water sources) migration of flocks. This pressure from daily migration could partly be addressed by the project “Sustainable Management of Pastures in Georgia to Demonstrate Climate Change Mitigation and Adaptation Benefits and Dividends for Local Communities” implemented by UNDP supplying improved water infrastructure to different farms. In addition there is also illegal grazing – livestock sometimes enters or is deliberately guided into the territory of the nature reserve or parts of the national park where grazing is not allowed. This is regarded as a violation and the park administration controls it more or less effectively.

Poaching is another important threat. The actual level of poaching is unknown. Target species include wild boar, bear as well as ground nesting birds such as chukkar partridge and pheasant. Illegal hunting that occurs outside the park is also a significant threat. For example, one of the newly released gazelles was killed by a poacher just outside VPA. The risk of poaching is highest in the autumn.

Even if the current levels of tourism are very low with around 8,000 visitors per year, unregulated tourism is likely to become an important threat. Currently visitor movement and behaviour is hardly controlled.

The VPA administration, especially the ranger service is responsible for law enforcement in VPA. The administration's capacity has improved over the past years as a result of technical assistance, training and the provision of resources by different partner organisations. In addition to a valid management plan VPA also has a law enforcement strategy. Despite all of this the overall status of law enforcement leaves much to be desired. Lack of motivation, political support and limited individual capacities may be among the root causes. The same causes the low level of administration skills and knowledge regarding biodiversity conservation and natural resources management. Biodiversity monitoring is conducted insufficiently at the moment.

Adjacent territories

The border of VPA connects directly with Azerbaijan state territory in the east and south. To the north and east VPA is surrounded by the rest of Dedoplistskaro municipality within Kakheti region. The areas of Dedoplistskaro region outside VPA are scarcely populated. Pastures are dominating in the direct vicinity of VPA (along the south-eastern and northern border). Especially along the road to Dedoplistskaro town an intensively cultivated agricultural landscape is dominating. Inappropriate practices of land and soil are hampering the sustainable development of these areas, especially by the use of post-harvest burning, pesticides and growing of monocultures. Missing structures to reduce wind speed and soil erosion and to retain water and humidity are causing problems here (Ibisch et al. 2015). The irrigation systems of the agriculture in Dedoplistskaro greatly depend on the Alazani and Iori rivers. Most of the systems fail to meet modern technical requirements and need reconstruction and upgrading (RECC 2012).

2.2.3. Alazani plain

Physical and climatic site conditions and potential impacts of climate change

Alazani plain is situated between the Greater Caucasus and the Gombori ridge and is orientated from north-west to south-east. The river Alazani flows along the plain dividing it into the right and left parts. The climate is diverse. The north-western sections have a moderately humid climate with moderately cold winters and hot summers. Moderately warm climate prevails toward the east where dry, hot summers and moderately cold winters are typical. The left part is more humid than the right part with annual precipitation of 940-990 mm and 800 mm respectively. Much of the precipitation occurs in the form of rain. In some years, permanent snow cover during winter develops in north-western and middle sections. The mean temperature in January is 0.2-0.8 °C and in August it is 25 °C.

As in the whole Kakheti, also the Alazani plain is very likely to be threatened by an increase of average temperature and an intensification of droughts due to climate change (Ministry of Environment and

Natural Resources Protection 2015) which may lead to an increase of desertification processes and losses in agricultural production. An example for water deficit development and scenarios of different crops can be seen in Figure 6. The intensity of winds and frequent hail storms are already increasing which is being connected to climate change.

| Crop | Water deficit, mm | | | | | | |
|--------------|-------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| | 1960-1975 | 1976-1990 | 1990-2005 | 2021-2035 | 2036-2050 | 2071-2085 | 2086-2100 |
| Winter wheat | 163 | 147 | 133 | 185 | 181 | 215 | 236 |
| Sunflower | 229 | 243 | 249 | 230 | 239 | 247 | 293 |
| Pastures | 296 | 292 | 288 | 320 | 326 | 335 | 364 |

Figure 6: Water deficit in agriculture in Alazani river basin (Integrated Natural Resources Management in Watersheds of Georgia Program 2015)

Biological diversity and its significance at national and regional level

Due to favourable conditions such as highly fertile floodplain soils, much of Alazani plain has long been modified and heavily used for agriculture. Now it represents a mosaic of anthropogenic, semi-natural and near natural landscapes. In terms of biodiversity the most important feature is the Alazani flood plain forest which is more developed and better preserved on the left side of the river than on the right side. On the dryer right side, secondary steppe and remnant flood plain forests are found in the form of largely degraded patches. The forest is heavily fragmented by patches of urban areas, cultivated land, orchards, secondary meadows and shrubbery, and a network of roads. Much of the right part of the plain is covered with cultivated land and vineyards. Artificial canals and ponds are also an important feature of the landscape.

The relatively well preserved left side of the flood plain forests are rich in lianas and represent rather a subtropical forest. The Alazani flood plain forest is typically composed of flood plain oak (*Quercus pedunculiflora*), poplars, Caucasian wingnut (*Pterocarya pterocarpa*) and others (Georgia's Protected Areas Programme 2005). The understory is composed by *Hippophaë rhamnoides*, *Elaeagnus angustifolia*, *Periploca graeca*, *Smilax excelsa*, *Hedera pastuchowii* and others. Flood plain forest is one of the most critically endangered habitats in Georgia. Flood plain oak and Caucasian wingnut are included in the Georgian red list. There are also wetlands dominated by *Phragmites australis*, *Typha latifolia* and *Sáipus tabernaemontani*, often mixed with *Carex lachenarii*, *Sparganium neglectum*, *Alisma plantagoaquatica* and others.

More than 40 species of mammals are found in the forest and other parts of Alazani plain including red list species such as Eurasian otter (*Lutra lutra*), lynx (*Lynx lynx*) and bear (*Ursus arctos*). Among birds, there are a number of red list species such as black stork (*Ciconia nigra*), Egyptian vulture (*Neophron percnopterus*), eastern imperial eagle (*Aquila heliaca*), white-tailed eagle (*Haliaeetus albicilla*), and lesser bastard (*Tetrax tetrax*). The area is an important resting and wintering site for migratory birds.

The herpetofauna includes at least 10 reptiles and 3 amphibians including the globally rare tortoise (*Testudo graeca*).

Extent, types, condition and current management of important natural resources within the PA

Alazani plain is rich in water resources due to which it is one of the country's best suited regions for fish farming. There are hundreds of fish ponds most of which have been set up relatively recently. All of them are privately owned and are managed mainly for the production of warm water fish species. The water from the Alazani River is extensively used for irrigation. The Alazani canal and its branches deliver irrigation water to agricultural plots throughout the Alazani valley. The canal and its network is state owned and is managed by a state owned company Georgian Amelioration Ltd.

A large portion of the Alazani flood plain forest is under a private hunting reserve (see Figure 3). First hunting reserves in this area were established more than 15 years ago and are now under one management. This hunting reserve has a management plan and the territory is divided up into zones such as hunting zone and breeding zone. The reserve has evidently played an important role in reversing the forest degradation process, which reached devastating levels 10-15 years ago. So far there has been very small scale hunting in this reserve and for most of the wildlife it is apparently a refuge site.

The modification of Alazani plain for agriculture was intensified in the 1960s as more land was cleared of forest or drained for agricultural use (crop production, vineyards, and pastures). Crop production required irrigation and a dense network of irrigation infrastructure (canals, water pumps) was built. Most of the agricultural land is now in private ownership or is leased with a long-term lease contract.

Most of the forest is state property. A small section (204.4 ha) of Alazani flood plain (Kaklis Kure) is a natural monument and is included in VPA. A section of the forest is under the Georgian church (close to Alaverdi monastery, see Figure 3). The largest part of the forest is within the above mentioned hunting reserve. The remaining forest is under state ownership and is managed by Kakheti Forestry Service (National Forestry Agency). Kakheti Forestry Service covers the management within the borders of the municipalities of Akhmeta, Gurjaani, Dedoplistskaro, Telavi, Lagodekhi, Signaghi and Kvareli. The forest is used for fuel wood production for local villages.

Existing threats to biodiversity and natural resources, root causes and impacts

The Alazani valley is an ancient cultural landscape that has been modified by intensive engineering of the landscape, especially hydrological manipulation to adapt to seasonal fluctuations of water availability, to protect infrastructure or to produce energy. Also road infrastructure, gravel mining and reduction of forest have caused more or less complex changes of ecosystem functionality (Ibisch et al. 2015).

Still flood plain forest remains in the Alazani plain. In recent years, certain sections of this forest (so called Chiauri forest) is threatened by permanent flooding due to human-induced changes in the

hydrological regimes of the left tributaries of the Alazani river (such as the Kabali river). This has been mitigated by improved maintenance of natural canals that are prone to become blocked during frequent flash floods and heavy rains in the Lagodehki district.

Livestock grazing and illegal and/or excessive forest felling, which has accelerated in the past decade, has resulted in the degradation and fragmentation of the flood plain forests. Heavy grazing prevents its regeneration. Large numbers of sheep and other livestock are driven to the plain from the mountains each winter and they often enter the flood plain forest despite legal restrictions.

Water pollution is a serious issue in Alazani plain. Agricultural runoff and fish farms cause eutrophication and contamination of water bodies and eventually the Alazani River. The Environmental Supervision of the MoENRP conducts water monitoring in Alazani plain.

Use of illegal fishing methods such as dynamites and electrofishing, has resulted in the depletion of fish stocks in the Alazani River. In order to reduce fish losses from the commercial fish ponds, the owners try to diminish otters and fish eating bird populations (herons, pelicans, great cormorants etc.) using illegal methods. The Eurasian otter is a protected species and killing them is illegal. Hunters often violate hunting regulations on waterfowl and hunt outside the official hunting season. The Environmental Supervision of the MoENRP is responsible for the control of illegal hunting and fishing. They appear to be more effective in combating illegal fishing than illegal hunting.

Alien mammal species such as raccoon, nutria, and musk rat were introduced into the area and have established strong populations by now. There is no monitoring or control except on the hunting reserve where raccoons are controlled.

2.2.4. Skills and knowledge in the conservation field

Several institutions share direct responsibility of biodiversity conservation in Georgia: the MoENRP and its subordinate structures: the Biodiversity Department, the Department of Forest Policy, the Agency of Forestry, and the APA with its territorial/administration organs.

The Biodiversity Department within the MoENRP has to coordinate and monitor the implementation and policy in regards to conservation. It ensures that the country fulfils the obligations of relevant international treaties that Georgia has ratified. Georgian Strategy and Action Plan of Biodiversity Protection is a guiding document for the department. The Department has a very limited presence in localities and is significantly understaffed. According to the National Biodiversity Strategy and Action Plan, the effective implementation of biodiversity monitoring, which is the one of the main responsibilities of the department, is hampered by the lack of capacity and financial resources. Currently this department is supported within the GIZ IBiS programme and improvements should be monitored soon.

The Environmental Protection Inspectorate is tasked to exercise state control in the field of environmental protection; to detect and prevent the cases of illegal use of natural resources; to control

implementation of the terms of licenses/permits issued by the Ministry. Both financial and human resource capacities of the Inspectorate are quite limited.

The Department of Environmental Permits and Licenses under the Ministry of Sustainable Economic Development has the competence to ensure implementation of state ecological examination, to organize approval of limits, to hold actions with regards to licenses, to issue the certificate of licenses and permits. The Department used to be under the Ministry of Environment and became part of the Ministry of Sustainable Economic Development several years ago.

This chapter analyses in depth the two principle actors in regards to conservation: Forestry sector and PAs sector. For a brief overview of capacities of other relevant organizations, please see the report on “Responsibilities, tasks and interfaces of relevant institutions”.

As a possible BR reaches out in areas outside of PAs in order to support sustainable economic development, also the municipalities are mentioned in this chapter as they are responsible for nature use and resource management outside of the PAs.

Forestry

There was frequent reorganization and change of priorities within the sector. As a result of the reform of the Forestry Department that took place in 2007, the number of staff was sharply reduced and salaries were increased substantially. In general, the forestry sector experiences a severe lack of qualified personnel. One of the pressing problems within the system is in respect of the establishment of community or municipal forest management systems. According to the Forest Code, the Local Forest Fund shall be managed by local self-governing authorities.

However, those forests have not been transferred to the local governments that do not seem to be ready to accept the responsibility of forest management due to lack of funding and capacities. In spring 2013, with the support of the German Society for International Cooperation (GIZ), MoENRP began the implementation of the National Forestry Programme, which is based upon the National Forest Concept and biodiversity strategy documents. All key stakeholder groups are involved in the process. The programme envisages the implementation of specific activities in several thematic areas.

A major reorganization of the forestry system took place in 2013. The forestry code was developed. The number of forest sector staff has increased over the last several years. Currently, there are 563 forest rangers as permanent staff and 47 as short term contractors. This permitted a reduction of the area under one ranger to 3,000 ha. In parallel, the Forest Policy Service was established within the MoENRP. The Department of Environmental Supervision, a legal body of public law, was also set up under the same ministry.

The purpose of these reforms was to ensure clear distribution of functions related to forest management, forest protection, policy and legislative development. Notably, in 2013 forest inventory was conducted on a sizable portion of the national forest fund by the relevant authority in accordance with the normative act (Article 21, Paragraphs 1 and 2) adopted by Governmental Decree #132 of 11th August 2005. This work is presently carried out by the National Forest Agency and will continue in the coming years (Ministry of Environment and Natural Resources Protection 2014).

Currently, the main problems in the forestry sector include unsustainable (and often illegal) forest use, excessive grazing, forest fires, hydropower, mining pests and diseases, improper hunting and climate change. Forest concessions have been given for 20 years to Chinese companies for so called 'legal' logging which is causing threats for forests. Poorly planned infrastructure development also poses a serious threat to Georgia's forest ecosystems.

Protected Areas

Responsibility for the overall administration of Georgia's PAs lies with the APA, which is a legal entity of public law within the MoENRP of Georgia. It has territorial organs and administrations which are responsible to manage individual PAs. When Vashlovani and Tusheti PAs were established in 2003, responsibility for management was decentralized to the individual Directorates, the director and subordinates being responsible for the day to day operational and financial management of the administration and for reporting to the Agency accordingly.

Management was financed from various sources including: targeted sums from the state budget, revenues from activities on the park territory, fines, grants donations, etc. 80% of this revenue was to be used under the Director's order to deliver the Management and Operational Plans for Vashlovani. The remaining 20% would contribute to the financing of Georgia's PA system. A number of trainings have been provided to the administrations of Tusheti PAs and Dedoplistskaro PAs¹. Identification of qualified staff with right education and experience remains to be a challenge in regions.

However, in 2008 a re-centralization process was undertaken. This resulted in the responsibilities for operational decision-making and financial management being centralized within the APA in Tbilisi. The Directorates thus now operate as operational teams of the Agency.

NACRES conducted a needs assessment for both Tusheti and Vashlovani PAs in 2008 that provided a solid overview of the skills and resources within the conservation of PAs system. The assessment focused on:

- Identifying the key priorities of activity for the organization
- Identifying the responsibilities for these key activities amongst the staff
- Identifying the capacities of the staff to undertake the activities
- Identifying what training and resources staff require to increase their capacities

The detailed results of the assessment can be found in Annex 2. The main needs identified are the following:

¹ Examples: FFI/NACRES project on Carnivore Conservation, USA Department of Interior's International Technical Assistance Program ITAP

Vashlovani

- Improvement of monitoring skills of rangers, based on monitoring strategy (to be developed)
- Training on GIS use and data entry
- Tourism:
 - Trainings: marketing, management of accommodation reservation, interpretation
 - Visitor management plan, interpretation specialist, infrastructure maintenance specialist, improvement of signs
- Technical trainings on rescue service, fire fighting and use of weapons
- Additional staff for: Conservation specialist, law enforcement, visitor and tourism management and translation
- Technical equipment such as meteorological stations, camera traps, quad bikes, tools and equipment for radio communication, firefighting, monitoring
- Planning and delivery of environmental education (incl. guide book, educational films)
- Improvement of salaries
- Improvement of authority of rangers
- Administration: specialized training for all staff on strategic development and planning, fundraising and recruitment
- Training on pasture management (to implement new pasture management plan)

Tusheti

- Trainings on: anti-poaching, community outreach, mountain rescue, monitoring, fire fighting, first aid, applied GIS
- Increasing number of rangers
- Equipment (basic and specialised, e.g. weapons, camera traps, video cameras, telescopes, meteorological stations, ArcGIS software & computer, also fire fighting and rescue equipment)
- Transport & movement (quad bikes, 4wd, horse livery, skis, snow chains)
- Improvements in the field of tourism:
 - Trainings of visitor management, language skills, marketing
 - Website administration, more printed materials and signs
 - Additional staff
- Research plan and equipment
- Administration: software, new winter office, reliable internet, training fundraising, project development, Training: accounting, budget planning, media communications

Since 2008 several trainings to support the PA administration and staff have been conducted but no comprehensive study or analysis on the improvement of skills and needs has been conducted since then.

Municipalities

The main administrative units relevant to the study at hand are Dedoplistkaro and Akhmeta municipalities. During interviews with stakeholders, it was noted several times that the capacities of management are low on local level, especially due to lack of qualified personnel and funding.

As of 2015, In Dedoplistkaro municipality 22 persons were employed in Sakrebulo and 137 staff members in Gangeoba. Responsibilities relevant to a BR would fall between the two departments: The Department for Economic Development, Statistics, Infrastructure, Spatial Planning and Architecture (7 staff members) and the Department of Sports, Culture and Education (2 staff members) (Sakartvelos Sakanonmdeblo Matsne 2015). Right now there are no specialists dedicated specifically to environmental issues or natural resource management.

Akhmeta Municipality employs 131 staff members. Similar to Dedoplistkaro, the two departments are responsible for matters relevant to a BR implementation: The Department for Economic Development, Statistics, Infrastructure, Spatial Planning and Architecture (10 staff members) and the Department of Sports, Culture and Education (10 staff members) (Sakartvelos Sakanonmdeblo Matsne 2014). Similar to Dedoplistkaro, there are no specialists dedicated specifically for environmental issues or natural resource management.

The superordinate authority of the municipalities is the Administration of the State Attorney-Governor in Kakheti Region (Telavi) which is staffed directly by the central government. According to stakeholder interviews conducted for this study this entity has even less resources and personnel to manage use of nature and natural resources in the region of Kakheti.

2.3. Natural Resource Management and Planning

2.3.1. Natural Resource Management

The region is represented by a variety of natural resources. According to the established practice, the natural resources management is usually carried out by the relevant regional departments of the MoENRP and local (municipal) government (see chapter 2.2.4 for details).

Forest resources

Forests are one of the most important natural resources for Kakheti region, which provides the population with firewood, construction materials and non-timber resources. 11% of Georgia's forests are located in the Kakheti region which has the second-largest forest area. 98% of the region's forests are mountain forests having a very high ecological and economic significance. A large part of mountain forests has the following functions: anti-erosion, climate regulation, water-conservation, creation of natural gene-pool and other functions. 2% of the region's forests are floodplain forests,

which are unique for Georgia's biodiversity. 15% of Kakheti's forests have become PAs (Ministry of Regional Development and Infrastructure Georgia 2013).

The forest management is carried out by the National Forestry Agency of the MoENRP. In the Kakheti region the agency runs the regional Kakheti Forest Service, which includes all the municipalities of the region and represents the Agency on site. The forest fund is managed by the Agency, which brings the country's forests absolute majority together. However, the law in action allows the existence of the local forests, which can be managed by the local government. At the moment, there are only two examples of the local government-managed forests: the Tbilisi City Hall that runs the surrounding forests of Tbilisi and the Akhmeta municipality, which manages the TPL and the forest fund.

Water resources

The region is within the watersheds scope of two big rivers, Iori and Alazani. The water resource management is carried out by the department of water resources of the MoENRP. The drinking water, in the urban areas, is provided by the United Water Supply Company of Georgia Ltd., the 100% shares of which is owned by the government. Only Signaghi and Lagodekhi have 24-hour water supply in the region. The other cities are supplied with water by a schedule. The rural water supply is the responsibility of the local municipalities. However, a large part of villages uses ground water and artesian wells. Most of the existing systems are outdated and need the rehabilitation.

Irrigation water for agricultural lands in Kakheti is provided 100% by the state owned United Amelioration Systems Company of Georgia. This company has four structural divisions in the region: Zemo Alazani, Kvemo Alazani, Lagodekhi-Kvareli and Kvemo Samgori structural divisions which provide irrigation water to all municipalities of Kakheti.

The Khadori hydroelectric power station is located on the river Alazani in the Akhmeta municipality. Additional HPP construction works are still planned in the same gorge.

Agricultural land

Georgia's agricultural land reform took place 1992 after the collapse of the Soviet Union and was characterised by mass denationalization of the agricultural land. During the Soviet Union, the main owner of the land was the government. As a result of the reform, the ownership of the agricultural land, particularly arable land and a large number of the perennial plants was given to the population.

At present, the land is in private and state ownership. The state-owned land is governed by the local self-government or by the Ministry of Economy and Sustainable Development. Currently there is no state control of management of private land in place.

It should be noted that there are many cases, in which private people traditionally own land, but don't have any type of documents proving the ownership. Especially the mountainous regions of the country are characterised by this. In the study area, such traditional ownership practice is widespread in Tusheti.

As for the quantitative indicator of the agricultural land, it should be noted that the 38% of country's agricultural land is located in the Kakheti region. Kakheti is regarded as one of the major agricultural regions of Georgia. The arable and pasture lands are especially large, due to which Kakheti is the leading region for cereal production and livestock farming. In the parts of the region with moderate humid climatic zone there is also vegetable-breeding, breeding of melon, watermelon, pumpkins and fruits. Grape-breeding is common in dry areas as well as in irrigated lands. In the target municipalities the agricultural land structure is shown in Table 1.

Table 1: Agricultural land structure in Akhmeta and Dedoplistskaro municipalities, Source: (National Association of Local Authorities of Georgia (NALA) & USAID)

| | Akhmeta municipality | Dedoplistskaro municipality |
|----------------------|----------------------|-----------------------------|
| Arable | 16,354 ha | 50,514 ha |
| Perennials crops | 1,799 ha | 1,160 ha |
| Meadows and pastures | 62,113 ha | 91,240 ha |
| Total | 80,226 ha | 142,914 ha |

In regard to land quality and condition the situation is similar throughout the region. Due to care-related expenses and a lack of education and training for the majority of farmers sustainable land management remains a problem, especially concerning use of fertilizers and pesticides, rotation schemes etc. Thus the land productivity is significantly reduced (United Nations Development Programme 2014) and degradation processes are progressing (Ibisch et al. 2015). The Kakheti region is characterized by water and wind erosion, which in combination with a rather dry climate in parts of the region, has a significant negative effect on the productivity of land and contributes to degradation processes.

Also the condition of the **pastures** in the region is critical. The majority shows significant signs of degradation. This issue is particularly relevant to the project's target municipalities of Dedoplistskaro and Akhmeta, where pastures occupy a big share of the land. It should be noted that there were only few assessment or detailed research conducted on the condition of pastures. Throughout Kakheti, also in Tusheti, no pasture management planning is done so far. The only exception is Vashlovani PAs where a pasture management plan was finalised recently. The pasture assessments done in the past were focusing on areas within the PAs, such as the pasture assessment within the project "Integrated Erosion Control in Mountainous Areas of the South Caucasus" implemented by GIZ (Abberger et al. 2015) that focused on selected pastures in Tusheti. It revealed that it is very difficult to get reliable livestock numbers and clear figures of pasture sizes in the first place. Border of pasture units are not documented in maps. It was concluded that there is a general unbalanced distribution of livestock. Overgrazing results from concentration of livestock around villages while remote areas are undergrazed or even unused. It was recommended to provide advice on pasture issues and to train

people in state-of-the-art pasture assessment methodologies (Abberger et al. 2015). The named project will focus on improvements of this situation at least until the end of 2017.

Also in Vashlovani PAs pasture assessments were done. One of them showed that productivity of pastures tends to decrease toward the south while the best pastures are in the northern parts of VNP (NACRES 2013). Especially in the central part of VNP there are significantly degraded areas. The assessment of NACRES found that, overall, the VNP pastures are in good condition. It has to be stressed that the assessment was done in May when no grazing was taking place. Findings of Ibisch et al. (2015) however indicate that degradation of herb coverage on the pastures is rather critical, especially around VNP but also inside. Some badlands and gully landscapes are likely to have been created by overgrazing and subsequent hydric soil erosion.

2.3.2. Land Use regulation

The land use within PAs is regulated by the Law on the System of Protected Areas. Article 12 outlines the terms for using natural resources within PAs. According to the Law, natural resources within the territories of strict nature reserves, national parks, natural monuments, and managed reserves is exclusive property of the country of Georgia. It is illegal to transfer the ownership to physical or legal persons. Although some exceptions are allowed within the traditional use zone of the national park and some parts of the managed reserve. More specifically, point 2 of Article 12 allows based on the agreement with the local governing unit, to lease land for 10 years.

Point 3 of the same Article grants the possibility of ownership rights outside of the state on the territory of national parks, for historical cultural places or places of natural-cultural significance. Namely, according to paragraph 2², it is possible to lease land plots for 10 years in the zone of traditional use within a national park, in case of agreement with the local self-governing authorities.

According to Article 12, paragraph 3, alongside with state property, other forms of property are allowed on the entire territory of protected landscape, its natural resources and natural-cultural or historical-cultural objects.

It should be also noted that, in accordance with the Georgian Law on "Formation and Management of Tusheti, Batsara-Babaneuri, Lagodekhi and Vashlovani PAs", the land and property on the territory of Tusheti PA is handed over to Tusheti National Park and thus to the APA and Protected Landscape, under the Municipality of Akhmeta. However, in accordance with the intermediate

² Article 2: Based on the requirement of the local self-governance body, in accordance with Georgian Civil Code, it is possible to lease agricultural lands (grasslands or pastures) located within the zone of traditional use of the National park or Reserve, to local population for a period of 10 years, based on management plan or temporary regulation rule. (Law on the System of Protected Areas of Georgia)

paragraphs of the law (Article 62), the above-mentioned requirement does not refer to lands on which there had been property relations of any kind prior to the moment of formation of the PA³.

It should also be mentioned that, in accordance with Article 64, paragraph 3 of the Georgian Law on "Formation and Management of Tusheti, Batsara-Babaneuri, Lagodekhi and Vashlovani PAs", the lands belonging to the protected territory are not subject to Georgian legal requirements regarding „privatization of lands of non-agricultural use owned by the state”. This is to prohibit privatization of lands on PAs.

In July 2010 the law “On State Property” was adopted. This law regulates issues related to the management and privatization of State property, including the pastures. Article 4 of the given law defines the State property which is not subject to privatization (Article 4. Paragraph 1. Sub-paragraphs დ.^ა and დ.^ბ), including pastures and migration routes. The above-mentioned law has a minor “gap” which may allow (or might have allowed in the past) the privatization of pastures leased prior to July 30, 2005. It also allows leasing of pastures attached to buildings owned by physical persons or legal entities, in accordance with the decision of local self-governance bodies. The law on “State Property” was adopted in 2010. Therefore, its paragraphs prevail over the Georgian Law on "Formation and Management of Tusheti, Batsara-Babaneuri, Lagodekhi and Vashlovani PAs". Thus, there is a legal possibility for the privatization of parts of pasture lands located in the zone of traditional use in national parks.

Stakeholders in the workshops conducted within the feasibility study formulated a need for improvement of the legislative base in conservation. According to them especially subsidiary laws need to be improved and clarified in order to avoid conflicts of conservation and land use. In addition conservation and PA issues need to be well reflected in other related laws such as laws on agriculture which can be contrary at the moment.

Status of land privatisation and assignment of land-use rights to target groups with special regard to livestock farming and pastures

Sheep-farming is a major activity in Tusheti. It is seasonal and semi-nomadic, and is closely connected to the socio-economic activities and lifestyle of the Tushetian community. In the end of May sheep are taken to summer pastures in Tusheti, whereas in autumn they are brought to VNP and adjacent winter pastures. It should be mentioned that shepherds are accompanied by family members, who remain on summer pastures until the middle of October and live in the Tushetian villages of Akhmeta district the rest of the year.

³ Article 62, Paragraph 1: This law does not refer to property relations between physical persons and legal entities of private law, established prior to issuance of this law, referring to the use of lands within Tusheti, Batsara-Babaneuri, Lagodekhi and Vashlovani Protected areas (purchase and sale of land plots, usufruct, construction of premises, rental, exchange, gift, inheritance, mortgage and lease). (Law on the System of Protected Areas of Georgia)

The summer pastures of Tusheti are divided between the local residents. Representatives of the Tushetian community have used pastures for centuries. A major portion of pastures is “attached” to certain villages or communities. The traditional system was destroyed in the Soviet period. In the process of establishing collective farms the pastures became state-owned, and the population moved to the lowlands. Beginning from the 90s of the 20th century, after Georgia gained independence, the pasturelands on the entire Georgian territory remained state-owned. However, the process of leasing of pasturelands was launched. Frequently the period of lease reached 49 years.

As mentioned above, the lands of VPA and TPA (except the Tusheti Protected Landscape) were transferred to the National APA. Hence, the rights on the leasing the pastures were also handed over to the Administration of the PAs. Apart from local lands (Akhmeta Municipality), forest fund lands were also handed over to the National APA. Due to certain technical gaps, in the process of handing over, the entire Tushetian territory (including residential areas, agricultural and non-agricultural lands, roads etc.) was defined as a territory owned by the Forest Fund. This status does not allow legitimacy of any agricultural activity, including the lease of pastures, as, according to Georgian legislation, agricultural activities are forbidden on the territory of Forest Fund. This error was corrected in the beginning of 2015. Since then the population has been able to sign lease agreements.

Apart from the above-mentioned, under new legislation, the leasing rules and terms regarding the pastures located in the zones of traditional use of protected territories had to be regulated. With this aim, on September 7, 2011 the Georgian government adopted decree № 339⁴. This decree regulates the fiscal and procedural issues related to the lease of pasturelands. Based on this document, the rules of lease are regulated: in coordination with the National APA, it is possible to lease a pastureland on the basis of a simple procedure, without a tender.

According to the representatives of Akhmeta District Municipality, there must have been certain lease agreements signed by Tusheti residents and local authorities, regarding the pastures on the Tushetian territory. Probably these agreements were signed prior to the adoption of Georgian Law on "Formation and Management of Tusheti, Batsara-Babaneuri, Lagodekhi and Vashlovani PAs". It should be noted that the lease agreements signed at the end of the 90s of the past century were not registered electronically. Therefore, corresponding agencies have no reliable information regarding the issue. According to local residents (including those using the pasturelands), the agreements have not been signed. Thus, we can conclude that it is still unclear whether lease agreements had been signed by the Tusheti residents and local self-governance bodies prior to the adoption of the above-mentioned law. Therefore, the given issue requires additional investigation.

All pastures in and some pastures around PAs of Vashlovani are under the ownership of Akhmeta Municipality, though physically, they are within the boundaries of the Dedoplistkaro Municipality.

⁴ Decree of the Government of Georgia №339 „On the Definition of Initial Auction Price of Lease of Immobile Property on the Protected Areas (with the exception of protected landscape and land of multiple use) and on the adoption of decree on the procedure of holding of public auctions“

45 pasture units within the Vashlovani PAs traditional use zone currently have lease agreements conducted with the municipality of Akhmeta before 2003. The agreements have a lifespan of 49 years. The law allows the leaseholders to continue their agreements with the municipality until the 49-year leases expire even if the manager of pastures is now APA and not the municipality. However, the law also requires that in order to be valid, the lease agreements must have been registered in Public Registry before 2009. None of the sheep owners have done this. Nonetheless, most of the sheep owners have been paying lease fees, which go towards the municipality of Akhmeta's budget. The lease agreements do not have drawings in electronic format. This makes the identification of concrete pasture boundaries impossible.

APA has not yet completed the registration of PA boundaries. Subsequently, sheep owners cannot register the current 49-year lease agreements before APA completes its registration, even if a political decision was made to "pardon" the violation of not having registered leases before 2009.

Physical persons have privatized 44 farms within the traditional use zone of VPAs before 2003 based on court decrees. Some of the farms are registered in public registry (although not electronically) before 2009.

If APA chooses to let the sheep owners maintain 49-year leases, it has to find alternative ways to manage pastures without holding lease agreements. In this case, APA has to require that the 49-year leases be registered in public registry. This is the only way to know which sheep owners have the legal right to a concrete plot of land. It is highly probable that the registration process will "free up" some pastures, which APA then can lease out.

The majority of sheep owners are interested in regulating the issue and registering leases. They have expressed readiness to do so as it will serve as a guarantee to their rights of traditional land use (revealed by interviews with sheep owners conducted within a land ownership study conducted by NACRES).

As mentioned above, the law on "State Property", adopted in July 2010, regulates privatization and management of state property, including pasture lands. The law also defines a list of state property not subject to privatization (Article 4. Paragraph 1, Sub-paragraphs $\partial.\text{a}$ and $\partial.\text{b}$), including pastures and migration routes. Based on Georgian practice, agricultural lands are subject to privatization, whereas pastures as state property (with the exception of above-mentioned cases) are subject to leasing. Currently Georgian Ministry of Economy and Sustainable Development implements land privatization process and leasing of pastures in coordination with local municipalities.

This applies also to state owned areas outside of PAs. As stakeholder workshops and interviews conducted within the feasibility study revealed, leasing and even selling of state-owned land including pastures and migration route nevertheless took place. Many pasture and migration areas especially important for transhumance in the corridor between Tusheti and Vashlovani are now privatised, at least informally. Practically the majority of the lands in Kakheti are private land by now. Most of these lands are not registered officially in the National Agency of the Public Registry of Georgia which makes it difficult to get an overview of land use and land ownership or to compile land use maps.

According to the information of the Kakheti 2014-2012 development strategy, only 20-25% of the land owners registered their agricultural land in the Public Registry. It is even less among farmers, only 2-4% of them have registered their ownership. One of the main reasons of such a low registration level is the lack of finances needed for the registration. The low awareness of the population is also contributing.

In order to get information on land use and land tenure, individual municipality heads need to be approached who can give verbal information on this issue, if the information level is sufficient. Land use or land ownership maps are absent in all municipalities and also the governor's office in Kakheti. According to information obtained in stakeholder consultations within this feasibility study, the effort to track the changes in land ownership is very high due to frequent changes which also aggravates map-making. It is necessary to do closer investigations on the availability of land for pastures and migration between VPA and TPA in order to establish a management of the transhumant livestock system in Kakheti. It is said that the Ministry of Economy still owns a lot of land which is claimed and used but not registered by a lot of private owners.

2.3.3. Spatial planning

At this stage, the spatial planning practice in the country is very poor. The current legislation, which now regulates the spatial planning is outdated and needs to be amended (see the 2005 Act "Principals of Spatial Arrangement and Urban Construction"). The country of Georgia currently works with support of GIZ on developing a "Spatial Planning and Construction Code".

According to the existing legislation, the spatial planning of Georgia is the responsibility of the government (the Spatial Planning and Construction Policy Department of the Ministry of Economy and Sustainable Development) and the municipality administration at the local level whose competence is the municipal spatial-territorial planning. Usually, the planning is performed within the municipality administrative boundaries or within the administrative borders of neighbouring municipalities, based on mutual agreements of municipal authorities. At present, in the Kakheti region, there is practically no such planning experience and practice (with the exception of Sighnaghi, where a master plan of the land use and development was developed).

There is only a strategy for regional development in Kakheti for 2014 to 2021 (Ministry of Regional Development and Infrastructure 2013), but no spatial plans or regional management plans.

The project "Guidelines for Tusheti Spatial Development Programme", funded by the World Bank (implemented by the GIS and RS Consulting Center "GeoGraphic", Studio Arsi and the Georgian National Committee of ICOMOS) produced documents and guidelines of spatial planning for Tusheti as a single territorial, historical and ethnological area. In the frame of this project several plans were developed, such as a Tusheti Area Spatial Development Plan Guideline with a focus on development of several villages. There is still a lack of spatial and land use planning which affects pasture quality and herding as well as uncontrolled development of settlements. Participatory

management in this regard is important as related conflicts in the population and among land users have to be solved.

For spatial planning in Kakheti the low level of land registration in the Public Registry is a major problem as cadastral records and cadastral maps, which should include the essential details related to the property, ownership duration, exact location, size and area etc., are absent.

2.3.4. Research and Monitoring

Especially the PAs of Vashlovani and Tusheti and their surroundings have been studied on a large variety of subjects related to flora and fauna, pasture quality, climate change vulnerability, socio-economic characteristics and so on. International and national experts have been doing research for international and national NGOs and donors, but also research institutions are active in the region. In the PAs research and monitoring is an important responsibility of the PA administrations also. The staff needs to do own monitoring and research for which capacities are rather limited, but should also initiate research activities by other organisations and institutes and actively cooperate with universities.

Following research institutions have been involved research in the study region, also in several research projects in cooperation with universities from abroad (such as Cambridge University, University of Greifswald etc.):

- Ilia State University, Tbilisi (also running a large field station in Dedoplistskaro)
- Ivane Javakhishvili Tbilisi State University
- Agricultural University of Georgia, Tbilisi
- Iakob Gogebashvili State University, Telavi

Several positive preconditions and problems in the field of research and monitoring have been identified during stakeholder consultations within this feasibility study that can be seen in the following table:

Table 2: Positive preconditions and problems in regard to research and monitoring, identified during stakeholder meetings in Kakheti in February 2016 and June 2016

| Positive preconditions | Problems |
|---|---|
| International participation in research | No system or database of research results |
| State interest in research results | Lack of research on soil |
| Data collection in PAs | Lack of professionals in the field and qualified staff |
| Standard prepared by environmental and education ministries | Lack of human and financial resources for research and monitoring |
| | Poor monitoring system |

| | |
|--|---|
| | State institutions do not respond to research and monitoring needs |
| | Lack of data on land use and tenure |
| | Lack or bad quality of monitoring in many fields: land use (e.g. livestock farming, sheep migration), tourism, local products |
| | Lack of research on degradation processes, e.g. on pastures |
| | Need for research of sheep market and development |

2.3.5. Additional requirements and potentials in conservation and natural resource management

The general requirements concerning biodiversity protection in Georgia are presented in the National Biodiversity Strategy and Action Plan of Georgia (NBSAP) 2014-2020 (Ministry of Environment and Natural Resource Protection Georgia 2014b). A summary and excerpt of this strategy and action plan can be found in Annex 1. Here specific issues for the region of Kakheti and Vashlovani and Tusheti regions are presented. The information is taken from the current management plans of the PAs, a workshop that applied the MARISCO tool and was conducted in Kakheti in 2015 and stakeholder interviews and workshops conducted within the feasibility study project in February 2016.

Tusheti shows high potential for a good development in the field of biodiversity and environmental conservation as it encompasses a network of PAs with three different categories (strict reserve, national park, managed reserve). In addition to that traditions of natural resource use are still maintained in some places and people seem to be aware of the connection between economic interests and conservation goals. A big potential of Tusheti and surrounding areas in terms of sustainable development is the strong support of various international donors and projects such as those of GIZ or the Czech Development Agency (CDA).

The strongest needs identified for TPA are:

- Maintain and restore traditional rules of land and forest use in order to achieve sustainable land use
 - Research and monitoring on land and forest use
 - Improve grazing management, especially planning and enforcement (even distribution of livestock on pastures, reduction of overgrazing)
 - Special support programs for sustainable land use like extensive grazing
- Improve land use planning and spatial planning in the protected landscape (make monitoring, compile land use maps, clarify and mitigate land use conflicts)

- Strengthen management authorities to improve law enforcement (improve qualification of personnel, equipment), please see chapter 2.2.4 on details for training and resource needs of the PA
- Improve awareness and education of local population and land users (PA rules, activities and benefits; consequences of unsustainable land use incl. fires, poaching, illegal logging; traditional knowledge in land use etc.)
- Planning and coordination of tourism activities to achieve a sustainable tourism with low impact on the environment (ecotourism specialist in TPA, regulation of infrastructural measures, waste and sewage treatment)
- Climate change adaptation
- Reduce outmigration of young people by creating permanent local employment opportunities and by supporting cultural identity and traditions of local people

Vashlovani is a unique landscape in Georgia with scenic beauty and high value and potential for conservation as it is considered an extraordinary example of natural badlands and a reservoir for otherwise rare species. The PA received the European Diploma for Protected Areas by the European Council in 2015. Stakeholders mentioned the awareness of the people in regard to the PA as a positive aspect. Also here different international NGOs, donors and projects such as GIZ and CDA support the PA and surrounding areas which was appreciated during the stakeholder meetings as this fosters the exchange and involvement of the communities and local stakeholders.

The strongest needs identified for VPA are:

- Improve grazing management (now especially implementation of recently finalized pasture management plan), law enforcement regarding illegal grazing
- Monitoring and law enforcement regarding poaching
- Training of PA staff including rangers (see chapter 2.2.4 for details on training and resource needs of the PA)
- Improve visitor management (control and guidance, offers)
- More transboundary cooperation for more effective conservation
- Management of human-wildlife conflicts

In the stakeholder workshops conducted within the feasibility study project (February 2016) and within an evaluation workshop using the MARISCO tool (December 2014 and January 2015) rather the broader **region of Dedoplistskaro** than VPA was discussed.

The following needs were identified:

- Establish and support sustainable land use practices among population (including support programs, stimulating incentives), especially tackling

- illegal logging (need for alternative heating resources)
- overgrazing (main problems: lack of regulation and enforcement, no responsible authority, scarcity of pastures, no extra forage for livestock)
- burning of pastures, fields and leaves
- intensification of agriculture
- Improve awareness and education of local population and land users (regarding consequences of unsustainable land use, link between economic development and conservation, traditional knowledge in land use etc.)
- Increase cooperation and involvement of population, especially by state authorities
- Strengthen local authorities (improve staffing and funding, especially in the field of forestry and agriculture)
- Provision of additional and alternative energy sources
- Improve control and enforcement regarding poaching, manage human-wildlife conflicts
- Decrease water pollution
- Improve waste management and processing, sewage treatment (sewage pits and landfills are especially big problem for livestock owners)
- Climate change adaptation
- Reduce outmigration of people by improving overall socio-economic situation and by creating permanent local employment opportunities

More general needs were identified which are relevant to the whole **region of Kakheti** including a possible corridor between Tusheti and Vashlovani region:

- Establish coordination of natural resource management at a larger scale in order to
 - Manage close ecological and cultural linkages between Tusheti and Vashlovani PAs (promote close cooperation between both PAs)
 - Produce more synergies between different projects and initiatives in different parts of Kakheti
 - To address the overall dynamics in the landscape (ecosystem approach) and achieve a sustainable development in Kakheti, e.g. by topic-related platforms and regional management bodies (intermunicipal), which could be achieved by the UNESCO BR concept
- Improve conservation by building territorial network based on national categories (especially category 5 and 6), e.g. Alazani floodplain
- Improve legislative base in conservation (subsidiary laws need to be improved and clarified to avoid conflicts, conservation and PA issues need to be well reflected in all related laws such as laws on agriculture which can be contrary)
- Establish local and regional environmental protection services (absent currently)
- Strengthen territorial management agencies and protection services to increase regulation of land use (staffing and training of personnel) in order to

- Improve communication among land users and improve land use conflicts
- Prevent intensification of land use (especially use of pesticides)
- Stop degradation of landscapes (especially Dedoplistskaro municipality, Alazani floodplain)
- Improve awareness and increase involvement of local communities and stakeholders
- Improve land use planning and spatial planning
 - Monitoring and research on land use (especially livestock and sheep farming)
 - Compilation of land use maps
- Improve socio-economic development and support of local economy
 - Clarification and mitigation of land use conflicts
 - In regard to transhumant sheep farming: Improve infrastructure and security of migration route
- Climate change adaptation, decrease vulnerability
- Waste management, sewage treatment

2.3.6. Condition and suitability of infrastructure and tourism

Infrastructure

Roads and Transport

The rehabilitation of internal roads in the Kakheti region is mainly funded by the municipal governments and supported by The Municipal Development Fund. Maintenance of street lighting systems is funded by the local governments. The cities and main roads of the municipalities are equipped with the properly functioning street lighting network. As of 1 January 2013, 835 km. (31%) of (asphalt) paved roads and 889 km. (33%) of unpaved (dirt) roads are in need of rehabilitation (Ministry of Regional Development and Infrastructure Georgia 2013).

Public transport in the region is represented by minibuses and cars transporting passengers within the municipality and to other municipalities.

The access to Tusheti is very limited and related infrastructure very vulnerable. There is no public transport. Tusheti is linked to the rest of Georgia by a steep ground road running over the main Caucasus ridge (Abano Pass, 2,850 m a.s.l). The road usually is closed due to weather conditions in mid-October and is reopened in the second half of May or early June. The road operation requires permanent rehabilitation due to heavy erosion especially after rainfalls and snowmelt. During summer, mudflows can block the road for several days.

Road network and quality in Dedoplistskaro municipality is in a bad condition and needs rehabilitation (Regional Environmental Centre Caucasus (RECC) 2012). Access to Vashlovani PA is not as limited as to Tusheti; still an off-road vehicle is required to get around the PA as there

are only dirt roads available (all year round). There is no public transport available to reach the PAs. The same applies for the PA of Chachuna which is interesting for tourists to visit in combination with VPA.

Gas and Electricity

The gasification level of the region is 37.5% (Ministry of Regional Development and Infrastructure Georgia 2013). Natural gas is supplied to most municipalities by the Kakheti regional office of Soccar Georgia Gas, and the Telavi municipality receives natural gas from Wissol Gas Distribution Company. Despite of the gasification, the absolute majority of the population still uses firewood. 99.7% of electricity in the regions of Kakheti is supplied by Kakheti Energy Distribution Company.

It should be noted that there is no gasification and electricity system presented in Tusheti. Shenako is an exception, which is supplied by the local small hydropower stations. The electricity is received, in rest of the villages for only individual needs, by solar energy. Unlike Tusheti, all settlements of the Dedoplistskaro municipality are fully electrified, but only 40% of the inhabitants are supplied with natural gas (RECC 2012). Drinking water is supplied only to 67% of village inhabitants.

Waste

Waste is collected and managed in all municipalities by limited liability companies selected through a tender. The companies remove waste from cities and villages in accordance with the schedule established by the local self-government. A lack of waste processing as well as sewage treatment was stressed as a problem during stakeholder workshops conducted for this feasibility study.

The only exception is Tusheti, where there is practically no waste collection. Currently, the waste problem is one of the most significant problems for Tusheti.

Agricultural equipment

The agricultural equipment in the region is mostly outdated and time-worn. A major part of the old equipment was produced in Russia or Belarus. In fact, no agricultural equipment has been imported from these countries since the 90s of the last century, with a few exceptions. The demand for high-quality agricultural equipment in the country has increased over the past 15 years. However, the private sector does not have sufficient funds for investments in modern technology. International and donor organisations such as USAID, GIZ or the Embassy of Japan have implemented several projects to improve this situation. However, the Georgian agricultural sector is still in need of modern technology.

In this regard there is a particularly difficult situation in Tusheti where the amount of agricultural machinery is minimal due to the geographical location (remote, difficult to access).

Tourism

The diversity of Kakheti's landscape, the existence of PAs, numerous historical and cultural sites and the high amount and diversity of wine-making farms in combination with a well-developed transport system in most of the region, there is a great potential for the development of tourism.

Around 30 hotels of different standard, more than 100 small hotels and guest houses, around 70 catering facilities, restaurants, café-bars, etc. and 15 travel companies operate in the Kakheti region. Room rates range from GEL 10-15 to GEL 350 (per night) in the region (Ministry of Regional Development and Infrastructure Georgia 2013).

In Tusheti there are more than 30 Guest Houses which are located in 12 villages of Tusheti. It's possible to locate more than 350 visitors at the same time in these hotels (Ministry of Environment and Natural Resource Protection Georgia 2014a). There is a visitor's centre of the PA where also the administration of TPA is located during the summer months. The visitor's centre of VPA is located in the administration building in Dedoplistskaro where tourists also can stay overnight. For more accommodation there is one hotel and one Guest House in the city of Dedoplistskaro (APA 2014). Altogether up to 35 visitors can be hosted in Dedoplistskaro at the same time. The level of service, standards and number of staff is a problem faced even by hotels of higher standard.

The tourism potential in Akhmeta is especially high due to the attractiveness of the Tusheti protected territories, the historical and cultural heritage and the diversity of ethnic and economic traditions, which characterizes the region. The existence of the family hotels and guest houses is particularly noteworthy as they characterise the community-based tourism which developed very well in Tusheti and makes it a very positive example all over Georgia. There is a growing interest of the local population in the tourism business, which is based on the successful experiences of the people already involved in this field. The limited access may be considered as an impediment of tourism development, but at the same time contributes to the development of a special eco-tourism in Tusheti which is still compatible with conservation.

In order to develop tourism, several tourist service and infrastructure measures are implemented and planned (e.g. for tourist paths, camping sites, waste management, electricity, security, etc.). Some examples are given in Table 3. This development must be designed in accordance with the development of the PAs.

Table 3: Projects related to tourism development in Tusheti (http://moe.gov.ge/index.php?lang_id=GEO&sec_id=119)

| Project | Donor | Implementer | Dates | Tourism-related aims |
|---|--|---|-------------|---|
| The Grant Agreement of the Tusheti Protected territories | Caucasian Nature Fund (CNF) | APA - The Agency of Protected territories | 2015 - 2017 | The new tourist infrastructure arrangement |
| The integrated erosion control measures in South Caucasus | The German Federal Ministry for Economic Cooperation and | Eco Consulting Group | 2014 - 2017 | Erosion mitigation measures implementation with the promotion of sustainable economic |

| Project | Donor | Implementer | Dates | Tourism-related aims |
|---|---|---------------------------------|-------------|---|
| | Development (BMZ) German Society for International Cooperation (GIZ) | | | activities, including the sustainable tourism development. |
| Transboundary Joint Secretariat for the Southern Caucasus (TJS) (III Phase) | The German Federal Ministry for Economic Cooperation and Development (BMZ) German Bank of Reconstruction (KfW) | Transboundary Joint Secretariat | 2015 - 2020 | Socio-economic development of PAs and its auxiliary areas |
| The Empowering Poor Communities and Micro-Entrepreneurs in the Georgia Tourism Sector | The World Bank Japan Social Development Fund (JSDF) | ELKANA | 2015 - 2018 | Creating jobs in Kakheti and Imereti and increasing incomes of the vulnerable population. One of the project's target area is Tusheti |

The tourism development in Dedoplistskaro is much poorer than in Tusheti. The main attractions are VPA and Chachuna Managed Reserve. A much lower level of tourism infrastructure and services should be noted (hotels, transport, tourist paths, camping) is the main reason. The remote location of VPA that can be reached only with off-road vehicles is also a hindering factor. Surely more promotion and marketing is necessary for the development of tourism, which was stressed as a need also during the stakeholder workshops conducted within this feasibility study. The tourism development at this stage in the Dedoplistskaro municipality is almost entirely related to VPA, details are given in Table 3.

Table 4: Projects related to tourism development in Vashlovani (http://moe.gov.ge/index.php?lang_id=GEO&sec_id=119)

| Project | Donor | Implementer | Dates | Tourism-related aims |
|---|--|-------------------------------------|-------------|---|
| The Grant Agreement of the Tusheti Protected territories | Caucasian Nature Fund (CNF) | APA - The Agency of Protected Areas | 2015 - 2017 | The new tourist infrastructure arrangement |
| Transboundary Joint Secretariat for the Southern Caucasus (TJS) (III Phase) | The German Federal Ministry for Economic Cooperation and Development (BMZ), German Bank of Reconstruction (KfW) | Transboundary Joint Secretariat | 2015 - 2020 | Socio-economic development of protected areas and its auxiliary areas |

During stakeholder consultations within this feasibility study, these needs in the field of tourism were identified:

- Need of ecotourism specialist in the PAs
- Improvement of tourism infrastructure, but also in the entire Kakheti (e.g. public toilets)
- More seasonal guides

- More effective system of booking
- Establishment and improvement of rescue service in PAs
- Assessment of Carrying Capacity for Tourism in PAs

2.3.7. Review of experiences and lessons learnt of related projects in Georgia

The previous attempt to establish a BR in Georgia took place in 2010 as part of the *Ecoregional Programme III Georgia* funded by the German Financial Cooperation. In 2010, a study was carried out to assess the feasibility of creating a BR in Kazbegi. According to consultations with beneficiaries of the study, there were several challenges in the process that affected the final outcome of the initiative, providing certain lessons for future consideration:

- The idea of a BR was not well understood by the local communities in Kazbegi. Misunderstandings concerning the concept of BR and the consequences for strict conservation in the region lead to negative feedback and rejection by local communities (e.g. fear of increase of restrictions in natural resource use).
- The added value of a BR was not understood by stakeholders of the project. As the idea of developing a BR came up in parallel with the idea to extend the NP, resulting in certain level of confusion as to why another PA was being discussed.
- The meetings with the communities were conducted and led, rather than facilitated, by an international consultant. The Georgian ownership was not strongly visible as the main counterpart and direct beneficiary structure (APA) was not as actively engaged.

The challenge associated with the clarity of the BR concept is not exclusive to Georgia. The UNESCO's recent publication "*Lessons from Biosphere Reserves in the Asia-Pacific Region, and a Way Forward - a regional review of biosphere reserves*" highlights the lack of understanding of the concept across boundaries as one of the main challenges for its successful implementation (UNESCO office Jakarta, Regional Science Bureau for Asia and the Pacific 2010). This fundamental challenge of the concept translates into difficulties in communicating its goal and value to stakeholders at national and local levels. Therefore, it is recommended that any future initiative of a BR establishment has a well elaborated public awareness plan that will deliver information to all stakeholders about the BR, its difference from the PAs concept, and moreover, its added value for local communities.

It can be regarded as crucial that there is a strong leadership by an agency or a group of agencies in the process of planning and implementation of a BR establishment. Without (a) capable leader institution(s), the process will not be successful, especially considering that participatory governance is not omnipresent in Georgia's political culture.

Some lessons learned during other projects conducted in Georgia may be relevant for the process of establishing a first BR in the country. The following table demonstrates challenges, lessons learned and specific projects. A specific experience or lesson can be drawn and related to the BR in Georgia.

Table 5: Lessons learnt in relevant projects and their relevance to BR establishment (compiled by NACRES)

| Challenge | Lesson Learned | Project the lesson drawn from | Relevance to BR establishment |
|--|---|--|--|
| Complexity of a project and diversity of stakeholders involved | For a project that is complex in terms of diversity of stakeholders involved, it is essential to: (iii) address several thematic work areas simultaneously; (iv) overcome capacity limitations among local civil society groups; and (v) build partnerships and cooperation among different stakeholders at both national and regional levels to ensure tangible impacts on the ground. | The Critical Ecosystem Partnership Fund (CEPF) | BR will potentially involve several municipalities, communities, national agencies, CSOs and private sector. |
| | Where project implementation involves more than one organization, it is important to ensure close collaboration among project partners from the earliest stage of project design in order to ensure successful and smooth implementation. | | |
| | It is useful to maintain very close coordination with grantees and partners at all stages of project development and implementation. | | |
| | Ensuring that the right organizations are involved in the partnership is as important as ensuring their involvement from the beginning of the project planning process. | | |
| | It is useful to maintain very close coordination with all partners at all stages of project development and implementation. | | |
| Understanding of the Concept and clear communication of the idea | Implementation of innovative and complex approaches requires considerable time and patience because it is necessary to ensure that key partners and stakeholders properly understand the concept and convince them to implement it with their own efforts and resources. Only through the joint efforts and partnership of several organizations can some outcomes be achieved. | Feasibility Study for the Ecoregional Programme III (Georgia), Kazbegi Project | Concept of a BR is quite new and largely not understood/confused with the concept of PAs. |
| | | The Critical Ecosystem Partnership Fund (CEPF) | |
| | IUCN (1998) explains the difference between PAs and BRs: “biosphere reserves are areas that may include protected areas as well as areas that do not have protected status.” This distinction, however, is often not understood by protected area practitioners. | UNESCO, Lessons from Biosphere Reserves in the Asia-Pacific Region, and a Way Forward A regional | The Georgian law on the system of protected areas mentions BR in a context that implies that BR is a type of PA. |

| | | | |
|---|---|--|---|
| | For example, the World Database of Protected Areas lists the Riverland (or Bookmark) Biosphere Reserve as a 900,000 ha protected area, though Riverland comprises a cluster of protected areas (about 720,000 ha) as well as agricultural and inhabited lands. This situation of confusion between the BR and the legally protected areas is common. It is necessary to clarify this distinction. | review of biosphere reserves | |
| Securing and maintaining interest and full support of the idea among key actors | Establishing partnerships among governmental, nongovernmental and academic organizations can be an effective means of delivering conservation impacts, by bringing together various skills and facilitating experience sharing. Strong partnerships among civil society organizations can also be an effective way of eliciting changes in government policies and actions. | The Critical Ecosystem Partnership Fund (CEPF) | While there are several institutions interested in moving the BR idea forward in Georgia, it is more at an individual rather than institutional level. In addition, a broader spectrum of actors needs to be engaged and interested, ministries besides MoENRP, such as Ministry of Agriculture, and Ministry of Sustainable Economic Development need to be engaged. |
| | Income-generating activities for local communities can be a very effective means of generating support for project implementation and improving relations between them and responsible state agencies implementing a BR. | Feasibility Study for the Ecoregional Programme III (Georgia), Kazbegi Project | |
| | Conservation issues are often quite low on the agenda of local people and authorities, and it can be difficult to recruit conservation volunteers because of the socioeconomic situation and the lack of a culture of volunteerism. | | |
| | Effective communication of BR-related issues, through various forms of mass media and with different techniques, is essential to reach politicians, business sector representatives and the general public. | The Critical Ecosystem Partnership Fund (CEPF) | |
| Unexpected impacts | Sometimes the conditions encountered during project implementation differ from those prevailing at the time the project was designed. Careful attention needs to be given to project planning, especially for long and complex actions. However, an adaptive management approach is the best solution for overcoming problems and obstacles that may arise during project implementation. As an aspect of this, flexible financial planning is helpful in order to be able to respond to unexpected impacts arising from changes in prices or exchange rates. | The Critical Ecosystem Partnership Fund (CEPF) | The adaptive management will be necessary considering that there will be multiple stakeholders and multiple jurisdictions involved in the project. |

| | | | |
|---|---|-----------------------------------|--|
| Commitments by the government and their sustainability | It is essential, therefore, to raise awareness and build support among key decision makers throughout implementation. Involvement of central and local governmental officials in project activities on the ground is an effective way of increasing their commitment and ensuring that conservation actions have concrete impacts. Allowances should be made for the unpredictability of the time required for official adoption of the relevant documents. | Ecosystem Partnership Fund (CEPF) | The sustainability of a BR in Georgia is dependent upon long-term commitments by government. |
|---|---|-----------------------------------|--|

2.4. Target group, their socio-economic situation and stakeholders

2.4.1. Socio-economic situation in the target region

General Information

Kakheti Region is located in eastern Georgia. The total area of the region is around 11,310 km², which is more than 16% of the entire territory of the country. Kakheti is subdivided in eight municipalities (see Figure 7):

- Akhmeta
- Gurjaani
- Dedoplistskaro
- Telavi
- Lagodekhi
- Sagarejo
- Sighnaghi and
- Kvareli

There are nine cities and 276 villages in the Region. The administrative centre of the Region is the city of Telavi.

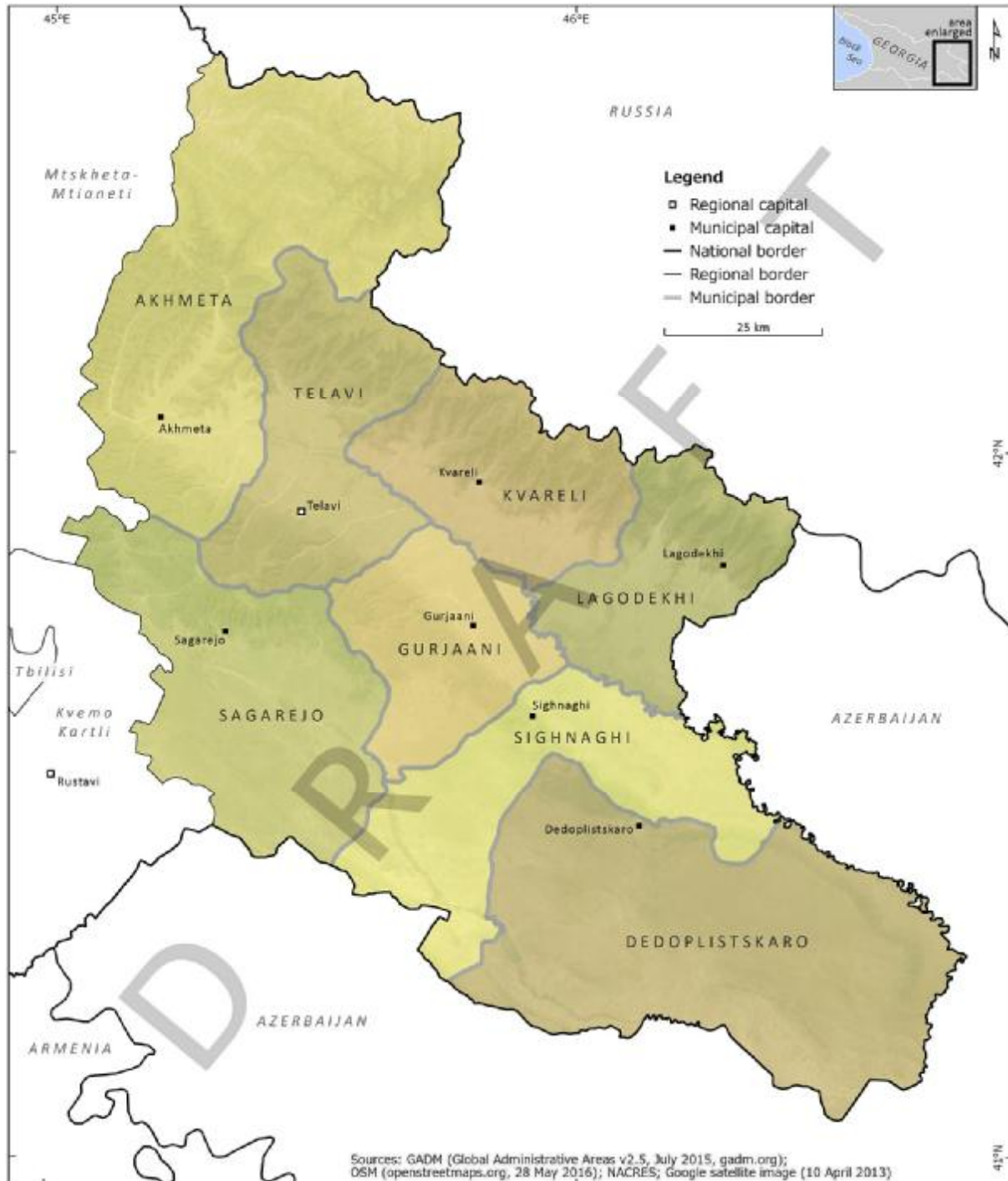


Figure 7: Municipalities of Kakheti (Map: Stephan Busse)

Dedoplistskaro is the southernmost municipality of Kakheti. It has an area of 2,532 km² and thus covers 22% of the territory of Kakheti region (Regional Environmental Centre Caucasus (RECC 2012). Akhmeta municipality is the northernmost municipality of Kakheti. It has 2,208 km² and thus covers almost 20% of the region.

Demography

In general statistical data concerning the demographic and economic situation of the study area is basically available on a regional scale. The information is poor in the section of the municipalities, making it difficult to analyze the demographic and economic situation at the municipal level. However, the results of the 2014 census were recently, which improves this situation.

Kakheti region has a population of 405,000 which is almost 9% of total population of the country (GEOSTAT 2015). About 80% of the population live in villages. The average population in each village is around 1,200, which is twice as large as the average village in Georgia. The average density of population is 36 people per km².

In the recent years an ageing and natural decrease of population in the region took place, both in cities and villages. Also out-migration of inhabitants is obvious. From 2012 to 2014 the population of Kakheti decreased by 21.6% which is slightly above the average of all municipalities (19.6%) except Tbilisi (GEOSTAT 2016). Due to the high level of outmigration, many villages of the Kakheti region are abandoned (especially in Akhmeta and Dedoplistskaro municipalities). A large part of employable workforce migrates to other cities of Georgia or abroad. In Kakheti, as well as in the rest of Georgia, there is a trend of female emigration which has a very negative impact on the demography of the population. The migration rate is a very high, especially among the young population (due to the lack of perspective). For now population aged between 20 and 39 make up only 17% of the total population of the region. As a result the total population of Kakheti has declined by 0.2% from 2002, and by 7.9% from 1989. The current population numbers for the municipalities are presented in Figure 8.

Table 6: Population by municipalities (GEOSTAT 2015)

| Municipality | Population |
|----------------|------------|
| Akhmeta | 42,300 |
| Gurjaani | 69,000 |
| Dedoplistskaro | 30,400 |
| Telavi | 70,900 |
| Lagodekhi | 52,000 |
| Sagarejo | 60,300 |
| Sighnaghi | 43,200 |
| Kvareli | 36,900 |

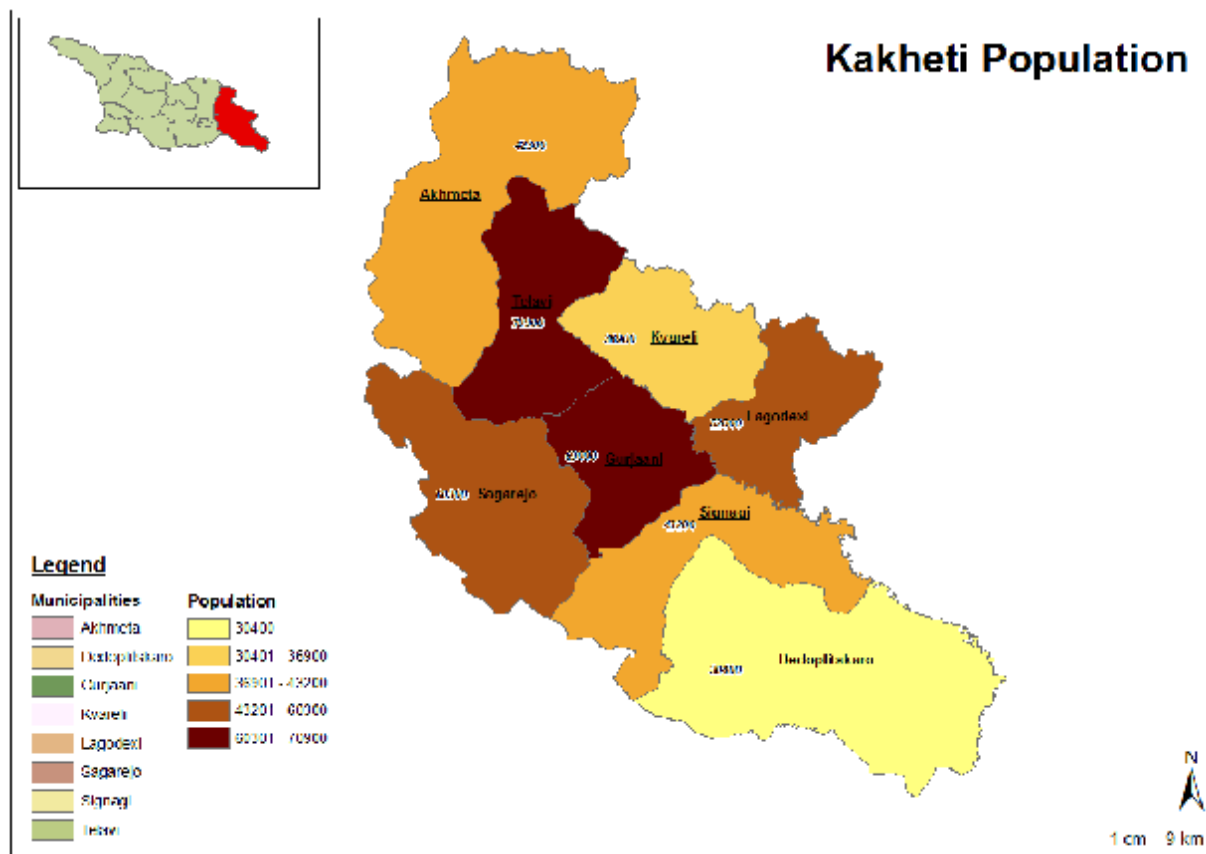


Figure 8: Population of Kakheti (based on data from GEOSTAT 2015)

The ethnic composition of Kakheti is displayed in Table 7 and Figure 9 below. The number of Kist population is important in the Akhmeta municipality. Telavi, Lagodekhi and Sagarejo municipalities are distinguished by the abundance of the Azerbaijani population as Sighnaghi municipality by Armenian and Russian population.

Table 7: Ethnic structure of Kakheti (GEOSTAT 2015)

| Municipality | Georgian | Ossetian | Armenian | Azeri | Russian | Kist | Other |
|----------------------|------------|-----------|-----------|------------|-----------|-----------|-----------|
| Akhmeta | 77% | 5% | 0% | 0% | 0% | 17% | 0% |
| Gurjaani | 98% | 1% | 1% | 0% | 0% | 0% | 0% |
| Dedoplistskaro | 89% | 0% | 4% | 3% | 2% | 0% | 1% |
| Telavi | 86% | 1% | 1% | 12% | 1% | 0% | 1% |
| Lagodekhi | 70% | 4% | 1% | 22% | 2% | 0% | 0% |
| Sagarejo | 67% | 0% | 0% | 32% | 1% | 0% | 0% |
| Sighnaghi | 77% | 1% | 8% | 2% | 10% | 0% | 2% |
| Kvareli | 96% | 2% | 1% | 0% | 0% | 0% | 0% |
| Kakheti Total | 85% | 2% | 1% | 10% | 1% | 2% | 0% |

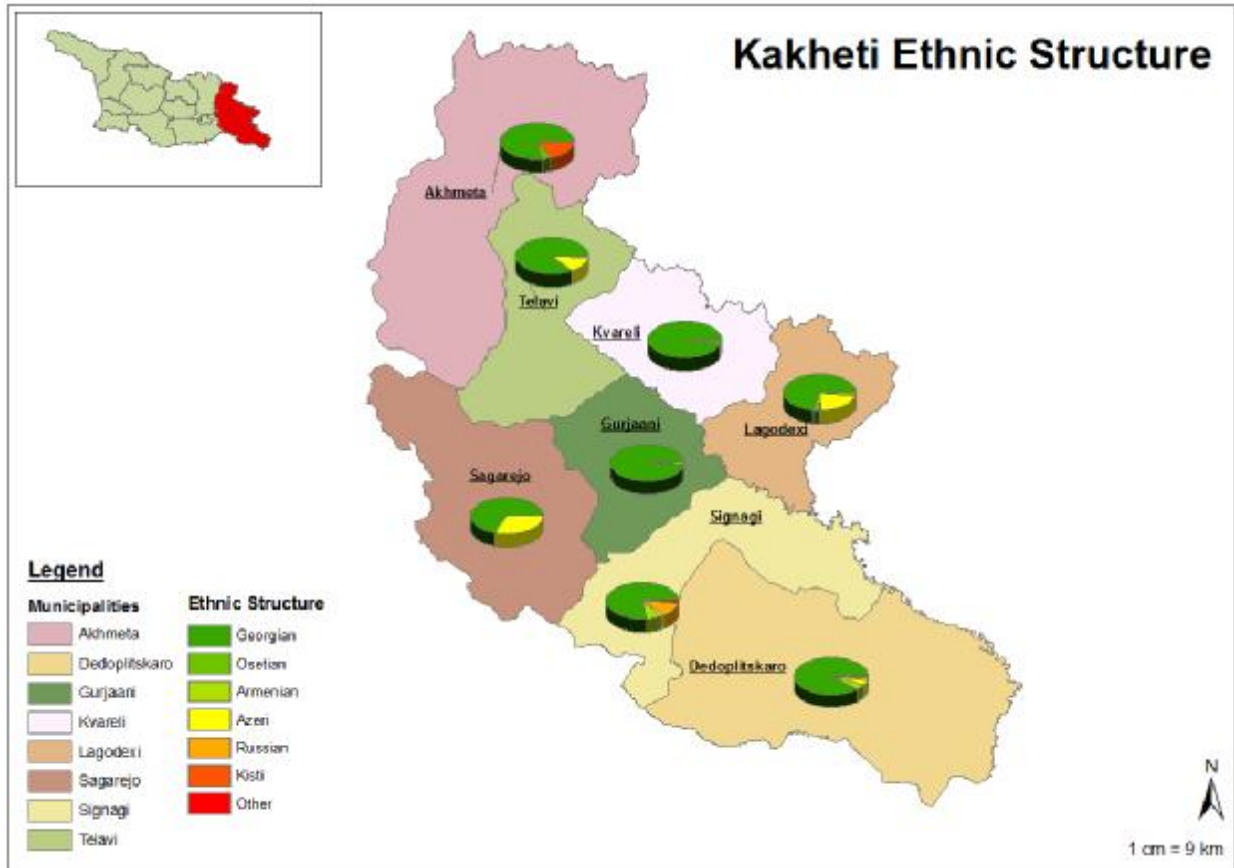


Figure 9: Kakheti Ethnic Structure (based on data from GEOSTAT 2015)

Economic Activities

49% of the entire population of Kakheti is employable population. Nearly 7% of them are unemployed, 71% are self-employed receiving income mainly from agriculture, which varies with the seasons and is therefore instable during the year (Ministry of Regional Development and Infrastructure 2013).

As for the level of unemployment, the situation in the region is somewhat better than the national average rates. Specifically, in 2012 the employment level in the Kakheti region was 67.1%, while the same rate of the overall country was 56.8%. The unemployment rate in the same years was 6.5%, which was significantly lower than the one of the whole country, which was 15.1% (Ministry of Regional Development and Infrastructure 2013).

The main sources of household income in Kakheti are employment incomes (22%), pensions (17%), state benefits (16%), borrowings and savings (16%), income in-kind (15%) and proceeds from the sale of agricultural production (14%) (GEOSTAT 2015). This means that pensions and benefits, loans or savings, including natural products, make up a larger portion of the household incomes than salaries. There is a similar situation in the project target areas of the Akhmeta and Dedoplistskaro municipalities.

Agriculture

The agriculture is the area’s leading field. Quite dominant are viticulture and winery (traditional branch in the Kakheti region), cereals, vegetables, potato and fruit production. In the agricultural structure of the target areas, the livestock occupies an important place, cattle as well as sheep-breeding. Poultry and bee-keeping are also represented.

The following statistical data are derived from the office of Georgia GEOSTAT. It clearly indicates the importance of the region in the agricultural sector of Georgia. According to the data of 2014, almost a third (31%) of the country's agricultural annual cultural crops comes from Kakheti. The country-wide share of different crops grown in Kakheti is shown in Figure 10. It can be seen that the region has a crucial role for the overall production of cereals, melons and fruit cultures in Georgia.

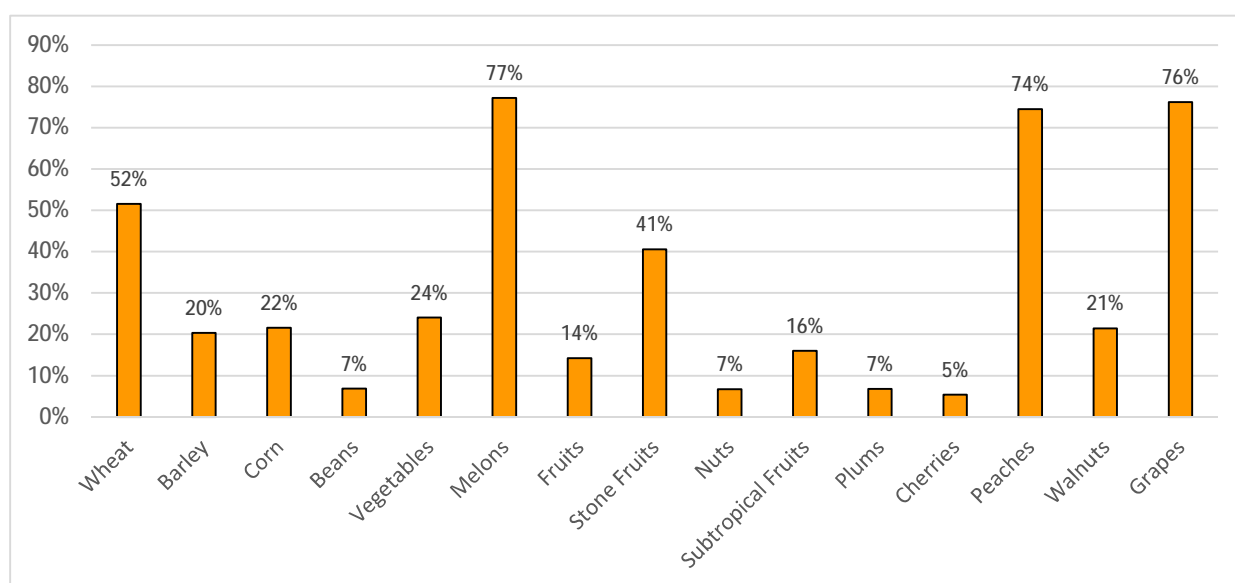


Figure 10: The countrywide agricultural share produced by the Kakheti region (GEOSTAT 2015)

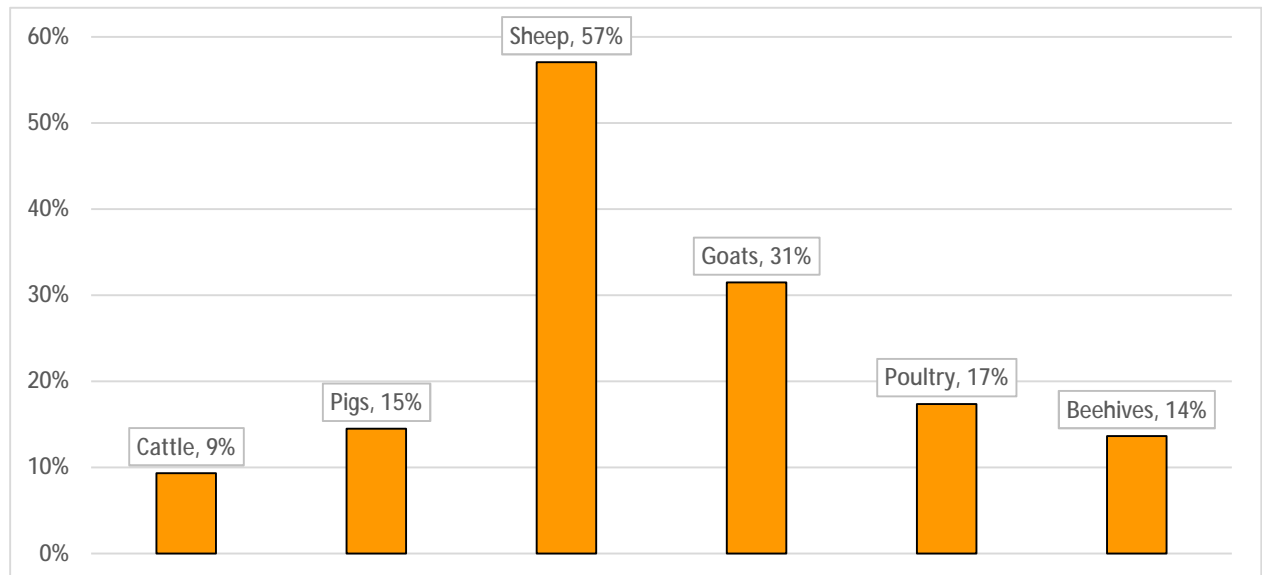
Only 52% of the country's total wheat crop and 20% of barley are produced in Kakheti (see also Table 8). As shown in the table, the average productivity of cereals (wheat, barley) as well as of vegetables is somehow lower compared to the average productivity of the country. But at the same time the average productivity of horticulture sharply outnumbers the analogue rate of the country. The lower rate of the average cereal productivity might be caused by a lack of knowledge and skills of the farmers in regard to best practices in agriculture. Desertification processes are likely to be an additional factor, which is relevant in the project target municipality of Dedoplistskaro. The intensive water and wind erosion processes are also notable, which also have a significant negative impact on the agricultural productivity (Ministry of Regional Development and Infrastructure Georgia 2013).

Table 8: The average productivity of various cultures (GEOSTAT 2015)

| | Kakheti (t/ha) | Georgia (t/ha) |
|------------|----------------|----------------|
| Wheat | 0.9 | 1.3 |
| Barley | 0.8 | 1.3 |
| Corn | 2.8 | 2.3 |
| Beans | 0.6 | 0.6 |
| Vegetables | 5.8 | 7.2 |
| Melons | 26.8 | 22.9 |

The region is distinguished by the production of the horticultural crops (the 77% of country's total production). The fruit production is also noteworthy, especially peach as 74% of the total production grows in the Kakheti. The grape production should be mentioned separately. Generally, Kakheti represents an ancient and unique region for the viticulture. Here are the unique viticultural microzones, where high-quality, well-known Georgian wine of different varieties of grapes is produced traditionally. The viticulture and winery also represents the most significant component of the region's tourism potential. Currently, 70% of the country's vineyards (33,582 ha) are located in the Kakheti region. It should be noted that vineyards of the project's target municipalities of Dedoplistskaro and Akhmeta, cover only the smallest part of the overall wine area in Kakheti (1,498 ha and 1,747 ha respectively).

Livestock is also an important branch of the region's agriculture. Figure 1 represents the region's countrywide share in livestock farming.

**Figure 11:** The countrywide cattle share of th Kakheti region (GEOSTAT 2015)

The diagram shows that the region is particularly distinguished by the number of sheep and goats. Especially for winter grazing Kakheti is highly relevant as 75% of all Georgian sheep graze there (Gonashvili et al. 2013). In this regard, the project's target municipalities of Akhmeta and Dedoplistskaro are highly relevant. Sheep and cattle breeding are traditional sectors there as the

municipalities host the biggest share of the region's pastures. The chart below corresponds to the diagram, which reflects the countrywide share of animal products produced in Kakheti. It also shows the importance of sheep and goat farming as both the production of sheep and goat meat as well as wool makes up 56-57% of the countrywide production.

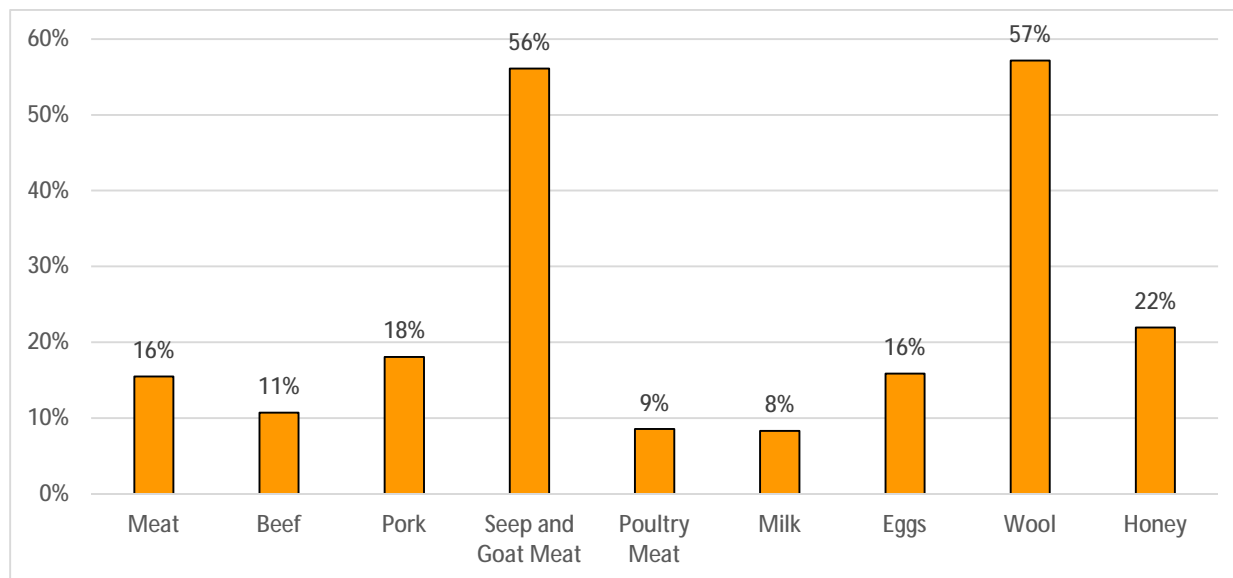


Figure 12: The countrywide cattle production share of Kakheti region (GEOSTAT 2015)

The agricultural sector of the project target areas is dominated by small family-type farms. The number of agricultural enterprises is relatively small. Farmers follow viticulture, fruit production and growth of cereals, vegetables and horticultural crops. At the same time they have a small amount of cattle to produce milk and other dairy products. The income of such small farms is usually rather small and strongly depends on the sale of any type of product. The maximum size of such family-owned land is 1.25 ha (the amount of land handled by the one household as a result of the land reform). The use of agricultural machinery by these groups is rare due to their high price. Technology is usually only used for the main agricultural activities. The rest is done by manual labour. The income structure of such small family farms is virtually identical to the region wide structure (see section "Economic activities" above) and no significant differences among municipalities can be observed.

Dedoplistskaro municipality is generally distinguished by dry and arid climate. The climate of the vegetation period is usually characterized with low precipitation. In this period the soil moisture is rather low, which significantly reduces the productivity of crops in the municipality. Nevertheless Dedoplistskaro represents one of the most traditional and important production areas for cereal cultures. Agricultural lands in Dedoplistskaro municipality cover 141,754 ha, including 50,514 ha of arable lands, 2,163 ha of perennial plantations, but pastures cover 86,037 ha (RECC 2012). Forest area covers 20,381 ha and shrubbery 4,480 ha. The main crops are wheat and sunflowers, others such as maize or vegetables are only of minor importance (Regional Environmental Centre Caucasus (RECC 2012). In Dedoplistskaro still old varieties of wheat are cultivated such as 'Shavpkha', 'Dolis Puri', 'Khulgo', 'Tavtukhi' and several varieties of barley (RECC 2012). Cultivation of rye, oat and millet has decreased. Wind erosion processes are also

affecting the agricultural lands. Windbreak stripes play an important role here. Such stripes were widely distributed in the municipality area during the Soviet Union. During the post-Soviet energy crisis, they have almost completely been destroyed, which contributed to a decrease of the productivity and an increase of wind erosion processes. According to RECC (2012), there were 300 farms in the municipality in 2012, also 3 cooperatives and 3 certified organic farms

Livestock farming represents the second main agricultural sector of the municipality. More than 50.000 heads of sheep are wintering here at present (RECC 2012). The municipality is especially rich with winter pastures (Eldari and Shiraki pastures). A big share of Georgian sheep comes to the municipality for winter grazing. The total number of pastures is over 90,000 ha. After the Soviet Union, a part of the state-owned pastures went under private ownership. The majority of it is currently under the responsibility of the Ministry of Economy. Each village also has a so-called community pasture, which is used as pastures for the local livestock. Practically no agency is doing management (protection, rehabilitation or cultivation) of the state and community-owned pastures. Consequently these pastures are usually overgrazed and degraded. In the municipality, as well as in the rest of the country there is no sustainable management planning practice in regard to pastures. According to the municipality, especially the pastures on Iori Plateau are severely overgrazed and threatened by a lack of management, regulation and clear property and use right situation (shepherds move to different pastures every year, no standards for grazing, no management authority etc.).

Table 9: Problems and positive preconditions in regard to agriculture, forestry and sustainable development, identified during stakeholder meetings in February 2016

| Positive preconditions | Problems |
|---|---|
| Adopted forestry policy (concept) oriented towards sustainable forest management | Lack of access to heating resources |
| International and donor projects | Lack of forest inventory/lack of management plan |
| Agricultural strategy embraces biodiversity component (also climate change is considered) | Agriculture is focused on monoculture intense production |
| Existing mechanism of certification of bio-farms, enables to enter foreign markets | Lack of agricultural infrastructure (water, road, energy) |
| Inventory of agro-biodiversity (catalogue of Georgian species and their state) | Lack of adequate veterinary service |
| GMO introduction banned in Georgia | Lack of state support programmes and financed incentives in field of agriculture and sustainable development |
| Favorable natural environment for business development (esp. soil) | Lack of pilot seed/species farms, no scientific work in this regard (state agencies need to involve, legislative base needed) |
| Human resources (talented, hard-working people) | No pasture management system |
| Positive impact of international organizations in the region | Low awareness of sustainable use of resources in the business sector |
| Existing and emerging small and medium enterprises | Inadequate legislative basis (in certain case absence of legislative basis) |
| Existing harmony between the aims of PAs and businesses in the region | Improper exploitation of natural resources due to anthropological impact on nature |
| | Lack of support on the part of representatives of state agencies (in some cases they hamper things) |



Picture 5: Discussing problems in the target region during a stakeholder workshop with NGOs and CBOs in Dedoplistskaro in February 2016 (Photo: Sophie Hirschelmann)

The total number of agricultural land of the **Akhmeta municipality** is 80,266 ha. 16,354 ha of that are arable, 1,774 ha are used for perennials and 62,113 ha are pastures. It can be concluded that the livestock represents the main direction of the municipal agriculture. The number of cattle in the municipality territory is more than 30,000 while the number of sheep in the same period is more than 50,000. The majority of the municipality pastures are located in Tusheti, which is used for summer grazing by farmers. Some pastures are significantly degraded, especially around the village overgrazing takes place. In Tusheti, these territories mainly belong to the protected landscape and are managed by the local municipality (as opposed to the national park territory, which is under the subordination of APA). Similarly to Dedoplistskaro, the Akhmeta municipality also does not carry out any practical measures to improve the situation of pastures.

Arable lands and perennial plants occupy only a relatively small area. The grapes represent the priority perennial culture (located in the lowlands). Recently, a decrease of vegetable cultures has been recorded due to low quality and low productivity of seeds, lack of irrigation possibilities and climatic conditions (droughts), a variety of diseases and pests, degradation and excessive grazing.

The following problems and positive preconditions with regard to agriculture and forestry were identified during the stakeholder consultations conducted within this feasibility study:

Table 10: Problems and positive preconditions in regard to agriculture, forestry and sustainable development, identified during stakeholder meetings in February 2016

| Positive preconditions | Problems |
|--|---|
| Cultural heritage | Infrastructure in Tusheti and on migration route to Vashlovani (roads, water, migration routes, catering, market places, electricity) |
| Tourism potential (cuisine, folklore, horse-riding, customs) | Erosion |
| Developed civil society | Neglect of taxes (people are unwilling to pay) |
| Wildlife | Lack of information on land use |
| Existing protected areas | Lack of qualified staff |
| Law on highlands | Absence of educational information centres (few |

| | |
|--|---|
| | not well developed education, but no information centres) |
| Ethnic diversity in the region | High interest rate of loans to develop businesses (hard to establish businesses) |
| Local archives (project has started) | Absence of tourist services (e.g. waste management big problem in Tusheti, toilets) |
| Support and development of folklore | Landfills |
| Biosecurity points for livestock in Sighnaghi and Dedoplistskaro | Wool production problems (e.g. bad access to markets) |
| | Access to market in general |
| | Inadequate regulations on land use |
| | Poor communication with local authorities, no common language of municipalities |
| | Restoration and support of museums |
| | Marketing and planning |
| | Insufficient support of local brands |
| | Lack of biosecurity points |

During a stakeholder group workshop in Alvani (Akhmeta) in February 2016, several strategies for priority problems were identified, which can be found in Annex 7.

Tourism

Tourism is also an important sector for the economic activities in Kakheti. It is especially well developed in Akhmeta municipality in Tusheti. In fact, Tusheti is one of the main tourist centres of the country, but only during the summer months when access of this high mountain area is possible.

Detailed statistical information about the tourism in the municipalities is hardly available. In the target municipalities of Akhmeta and Dedoplistskaro the tourism development is mainly related to PAs. Statistical data for the PAs is collected by the administrations every year. Data for Vashlovani PAs has gaps and only gives the information for the past two years (2014 and 2015) and only for the first half (January to June): 5,799 people in 2014 and 6,289 people in 2015. According to APA, the number of visitors in the Tusheti PAs reached 9,676 in 2015, while in Vashlovani 10,976 visitors were counted. More detailed data is available for Tusheti, according to which the number of tourists, guest houses and employees in tourism increased significantly from 2006 to 2013 (Tusheti National Park was established in 2005) (see Figure 13 and Figure 14). This indicates the sustained growth of the importance of this field.

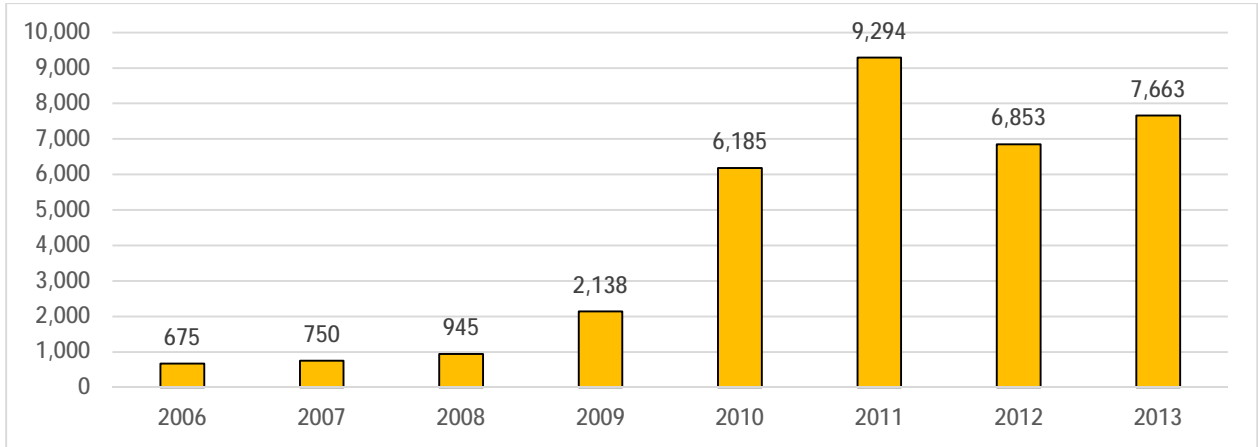


Figure 13: The dynamics of the number of visitors in Tusheti 2006-2013 (APA 2015)

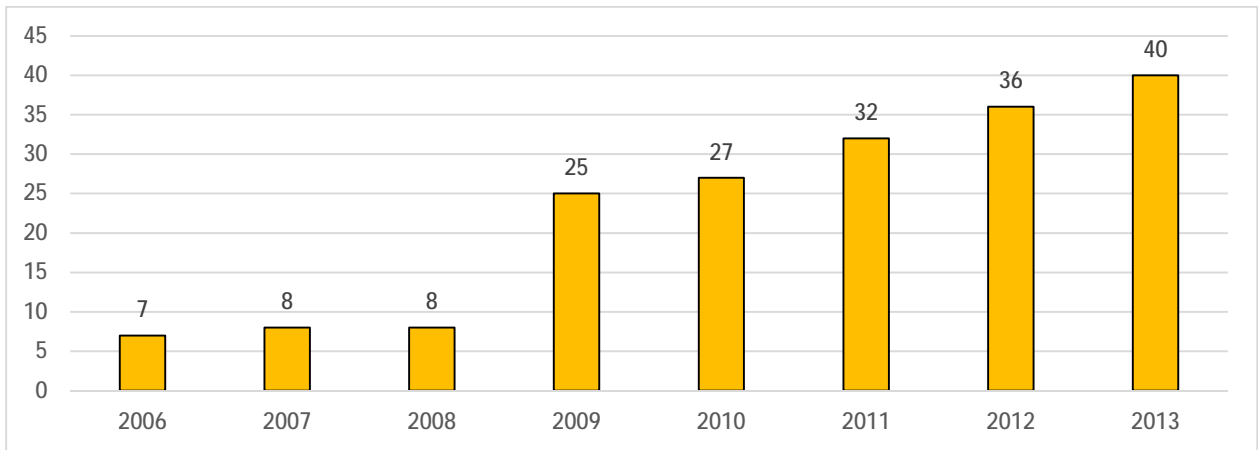


Figure 14: The dynamics of the number of guest houses in Tusheti 2006-2013 (APA 2015)

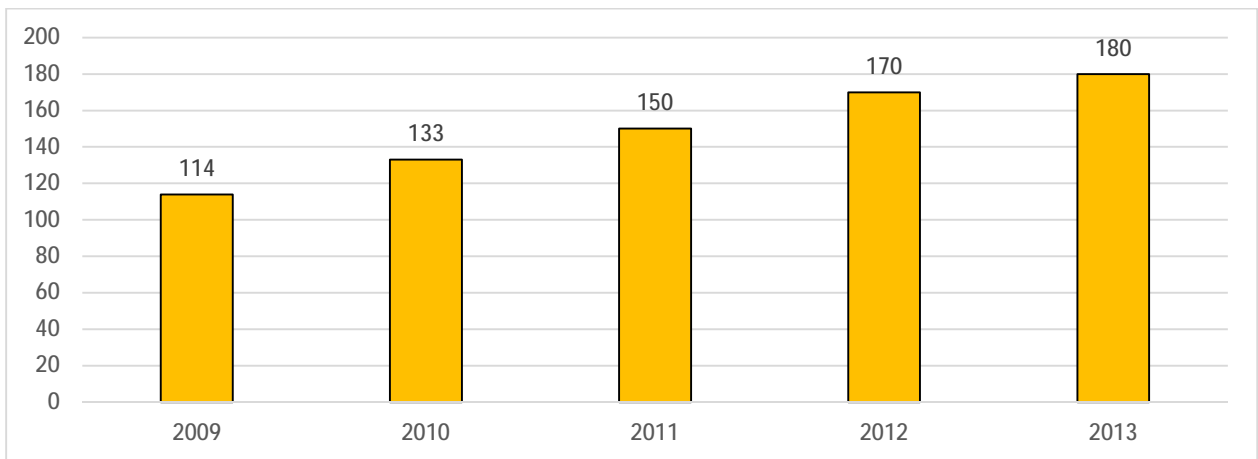


Figure 15: The dynamics of the number of tourism sector employees in Tusheti 2009-2013 (APA 2015)

With regard to tourism the following problems and preconditions were identified during stakeholder consultations conducted within this feasibility study:

Table 11: Problems and positive preconditions in the field of tourism and culture, identified by stakeholders during consultations in Dedoplistskaro February 2016

| Positive preconditions | Problems |
|--|--|
| Landscape and biodiversity | Inadequate transport infrastructure (roads) |
| Large number and importance of cultural monuments | Underdeveloped tourism infrastructure (picnic spots, cafés, toilets etc.) |
| Existing museums | Poor use of modern technology and innovations in the tourism infrastructure |
| Existing protected areas | Inadequate waste management system |
| Existing network of folk traditions, crafts, festivals, cuisine | Mentality – low awareness of environmental pollution |
| Hotel network (in Kakheti in general, not so well developed in Dedoplistskaro) | Miserable state of cultural monuments |
| Potential of producing eco-products, agro-tourism | Lack of eco-products (high potential though) |
| Tourist routes and information centers | Inadequate legislative basis and enforcement for the protection of cultural heritage |
| Liberal legislative basis | Quality of guesthouses |

2.4.2. Socio-economic situation of transhumant livestock farmers

The study focuses on the regions of Tusheti and Vashlovani and adjacent areas in Akhmeta and Dedoplistskaro municipality. Despite the geographical differences of these areas, they are closely connected by land use activities of livestock farmers, who still follow a traditional, transhumant sheep farming. They use Tusheti for summer grazing and Vashlovani and surrounding areas as winter pastures. This type of migration farming developed over centuries. As the study focuses on both areas and the connection is ensured by the transhumant sheep farmers or the Tush community, they should be discussed as one of the most important target groups of the project.

Tusheti

The majority of Tushetians permanently live in the villages of the Kakheti region, Upper and Lower Alvani (Akhmeta municipality) and Laliskuri (Telavi Municipality). Only very few people stay in Tusheti in winter. The population goes to Tusheti during summer (second half of May until beginning of October), mainly for livestock farming and tourism as economic activities. The number of people officially living in Tusheti has dropped in recent years. During summer time, about 3,000 people live in Tusheti (Abberger et al. 2015).

In 2010, according to research conducted by NACRES, 46.9% of the Tush population was engaged in some kind of economic activity directly in Tusheti. Most of it was related to tourism (82.8%), 13.8% to animal breeding, the rest of it (3.4%) to other agricultural activities (mainly potato growing). According to the same survey, 80% of the income of the families is based on the agricultural activities, namely livestock farming. Only few households have an income from crop production and from gardening (Abberger et al. 2015). The interest in the tourism sector increases more and more. One third of the income relies on other sources including tourism.

According to the 2010 survey, the absolute majority of the population had the willingness to be engaged in tourism-related activities (see statistics on tourism development above). The absolute majority of respondents (80%) recognized tourism as the most important directions for the development of Tusheti. One of the findings of the research is very noteworthy. Concretely the environmental consciousness of the population is rather high and the absolute majority recognizes the necessity of the protection and sustainable use of the natural resources. However, the population assumes that the establishment of PAs brought restriction of access to natural resources (mainly wood, but also agricultural land).

Land in Tusheti is state-owned. In a study conducted within the “Integrated Erosion Control Programme” by GIZ and the Austrian Development Cooperation no livestock owner had leased nor was paying rent for the use of pastures. Arable land and pastures can be used within the traditional use zone of the NP and in TPL which is under the management of Akhmeta municipality. Lands are assigned by the administration and used in agreement between village inhabitants. Historically, land use in Tusheti was structured in a specific way, completely dividing areas for haymaking and crop growing and areas for grazing. This was abandoned during Soviet Union times and still has not recovered. Thus remote areas are not used for grazing anymore and overgrazing around villages and on former arable land is increasing and causing erosion. Grazing is not well organised and managed and there is a need for clear agreements and management plans. It is recommended by Abberger et al. (2015) to set up land-user organisations that increase cooperation with the administrations of municipality and TNP to improve this situation.

Vashlovani

Winter pastures of the Tush community are mainly located in Vashlovani and adjacent territories. Some pastures (around Kasristskali) are even under the governance of Akhmeta municipality. A study of the Biological Farming Association ELKANA (2014) revealed that not only Tush livestock farmers use these pastures and migrate to other areas than Tusheti for summer grazing. They studied 70 farms of which around 40 use summer pastures in, for example, Tianeti, Pankisi Gorge, Javakheti, Gombori or Khevsureti. An average farm in and around Vashlovani constitutes 300 ha, the smallest having 80 ha pastureland and the largest 1,000 ha of pastureland (ELKANA 2014). Realistic livestock numbers are difficult to obtain. According to numbers gathered by ELKANA in 2013 there were 58,350 sheep, 1,507 goats, 1,250 horses, 180 donkeys and 3,497 cows. During consultations other stakeholders named rough estimations of around 60-80,000 sheep migrating from Tusheti every year.

The farms in Vashlovani represent either (1) family owned and run businesses, (2) corporately owned but privately managed properties or (3) private farms managed by individual shepherds (RECC 2013). Most of the farms have a lease contract; the minority has a sub-lease contract which is not officially registered (20-30% according to ELKANA 2014).

The use of winter pastures for grazing starts in October and lasts until April or May, depending strongly on the quality of the winter pastures and the opening of the road to Tusheti in the Caucasus Mountains to migrate to the summer pastures. The majority of farms leave the winter pastures in April (see Figure 16). The activities related to sheep farming throughout the year are displayed in Figure 17. The map in Figure 18 shows the official migration routes in eastern Georgia including the 200 km drove road from Vashlovani pastures in the south-east to summer

pastures in Tusheti. In reality individual migration routes of livestock herds may vary and also change from year to year. Figure 19 shows the location of the official migration routes in relation to the PAs in Kakheti.

The livestock migration remains a major challenge in the transhumant sheep farming system. The main problems are:

- Narrow migration route, especially due to privatization of lands in the migration corridor (e.g. occupation by land by fencing and tilling)
- many routes are only asphalt roads and sheep are hit by cars
- Drove-ways/transhumance routes are not marked, low awareness of population
- Loss and lack of intermediate pastures, lambing places overnight resting areas (due to privatization and conflicts with land users)
- Degradation of intermediate pastures
- Conflicts with land users (especially crop farmers) and local population (e.g. over use of village pastures)
- Lack of veterinary service
- Lack of control system to organize migration and avoid overload of pastures
- Lack of so-called biosecurity points for washing, disinfection, quarantine and drinking
- Landfills

Transhumant livestock farmers arrange the use of agricultural land for grazing with private land users. This is based largely on traditional arrangements. Still conflicts are prevalent as ownership arrangements change and fees are increasing year by year. Transhumant livestock farmer are also renting municipality pastures for their flocks. In general there is a strong discontent with the migration situation among the transhumant shepherds and livestock farmers which represents an overall threat to maintaining this traditional land use system. Officially the MoESD is responsible for the management of these issues but on-going activities and progress could not be identified by the study at hand. The National Food Agency under the MoA is supposed to take over the management of the migration corridor as soon as the MoESD has resolved and clarified the ownership conflicts and property situation.

Leaving to Summer Pastures

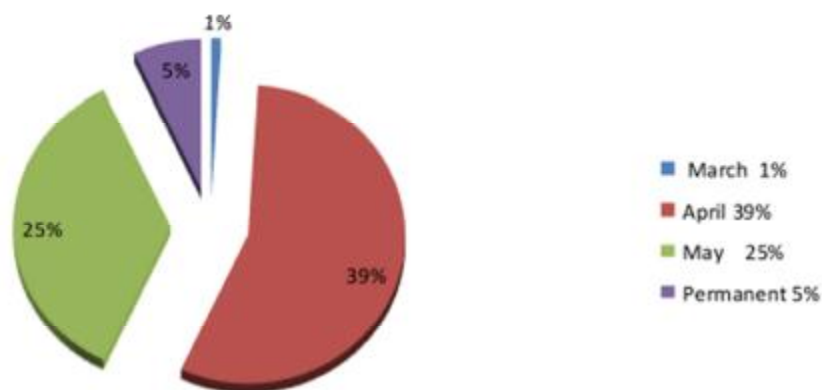


Figure 16: Leaving from winter pastures in Vashlovani (ELKANA 2014)

Seasonal Calendar of Tush Herders

| Activity | month | I | II | III | IV | V | VI | VII | VIII | IX | X | XI | XII |
|-------------------------------------|-------|---|----|-----|----|---|----|-----|------|----|---|----|-----|
| Lambing | | X | X | | | | | | | | | | |
| Sheep shearing | | | | | X | | | | X | | | | |
| Lamb shearing | | | | | | | | X | X | | | | |
| Sheep washing | | | | | X | | | | | X | | | |
| Vaccination | | | | X | X | | | | | X | X | | |
| The main phases of dehelmentization | | | | X | | | X | | X | | X | X | |
| Preparation for drive | | | | X | X | | | | | X | | | |
| Driving | | | | X | X | X | | | | X | X | | |
| Additional feeding | | X | X | X | | | | | | | | | X |
| Sheep milking | | | | | | X | X | X | | | | | |
| Introduction of a ram into a flock | | | | | | | | | | X | | | |
| Number of activities | | 2 | 2 | 4 | 5 | 4 | 1 | 2 | 3 | 5 | 3 | 1 | 1 |

Figure 17: Seasonal calendar of sheep farming (ELKANA 2014)

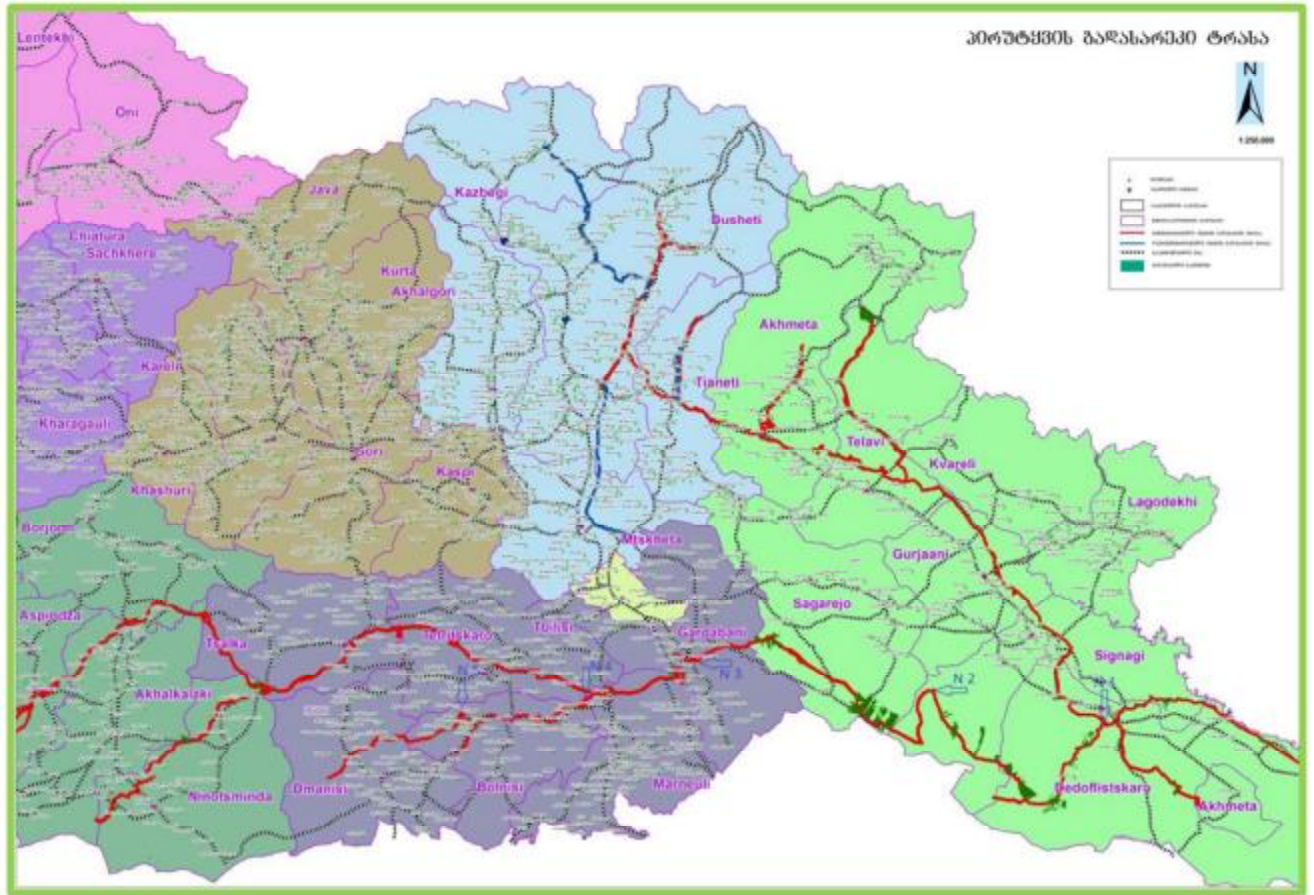


Figure 18: Map by Ministry of Agriculture Georgia: Registered migration routes for livestock in central and eastern Georgia (Edward Hamer LTD 2015)

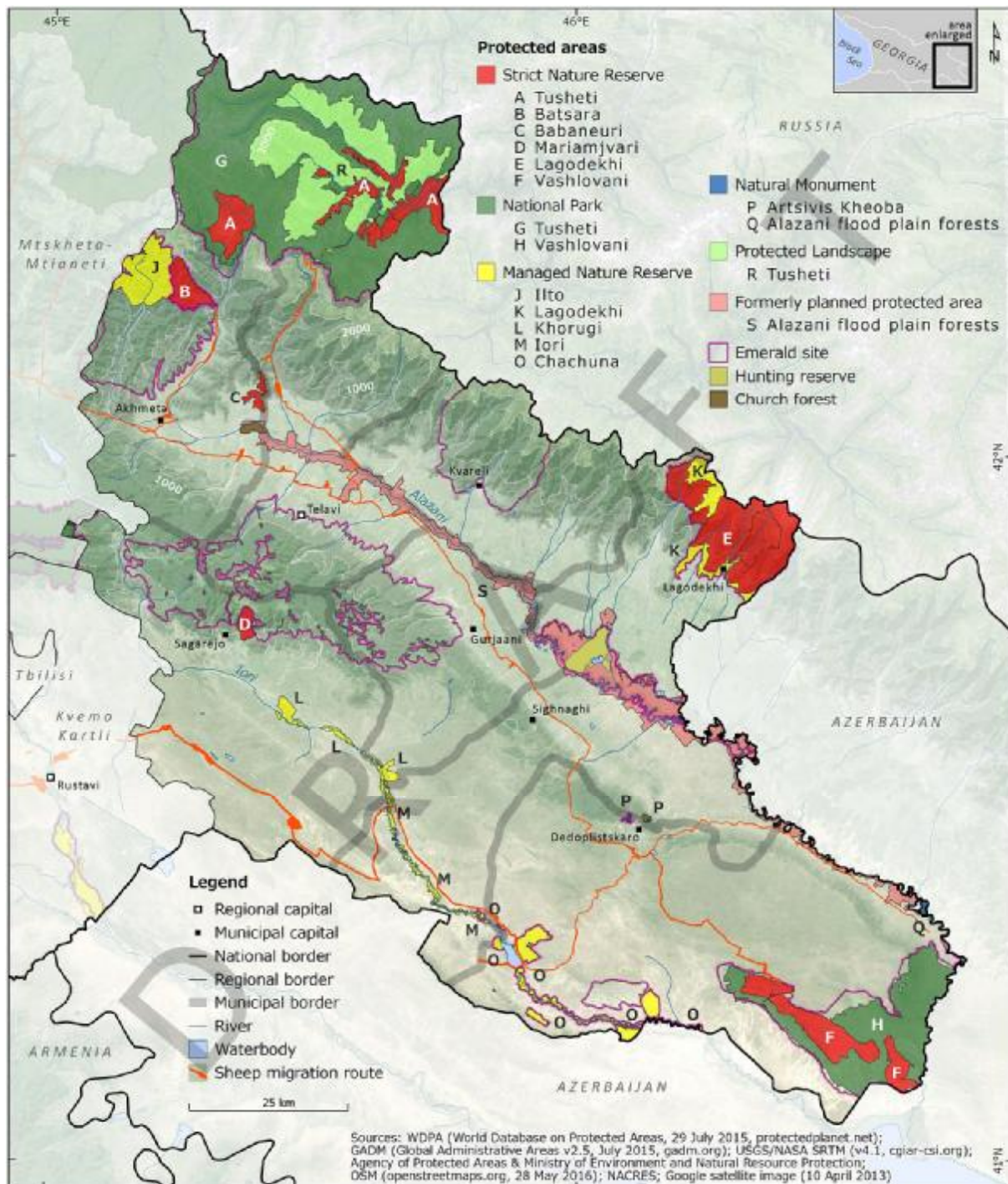


Figure 19: Kakheti PAs and livestock migration route (Map: Stephan Busse)

Products and Value Chains

During the stay on the winter pastures, the main attention is paid to wintering of the livestock and the initial feeding and strengthening of lambs. Thus the commercial use of livestock products is less relevant and only a small number of farmers make sheep and cow cheese (ELKANA 2014). Cow milk is more important during the autumn-winter period of which much is sold to the Dedoplistskaro Dairy plant. If some cheese is produced, it is sold in markets such as in Sabatlo. Livestock is sold mainly in Kasristskali and Dedoplistskaro. The commercial use of the livestock increases during summer and autumn. Milking and cheese making is the focus on the

summer pasture. Milk is processed to cheese and stored in plastic bags. Farmers sell lambs and cheese in late August and September. This is the time period when farmers need the cash to pay salaries to shepherds and rent the winter pastures (Kochlamazashvili et al. 2014). Meat is mainly sold in autumn in the lowlands during migration to the winter pasture.

The main products in this sheep farming system are milk, Guda cheese, sheep wool, meat and living sheep (RECC 2013). Value chains are generally still weak. Biggest challenges are the remoteness of Tusheti and high transport costs as buyers don't go to Tusheti. Traders are either small middlemen or dairy factories in Akhmeta or other regions (Abberger et al. 2015). Tusheti cheese is famous and a regional speciality known all over Georgia but the quality differs and hygienic standards are often not very high.

The product of sheep wool requires special attention. Lots of wool can be produced in spring and summer. Kochlamazashvili et al. (2014) mention several systematic problems in this field, such as improper feeding of sheep and wool shearing and classifying. Equipment for processing to increase the value of the wool is also lacking. The wool industry is very underdeveloped and unprofitable for many actors occupied in this field. Thus prices for wool have decreased (price of 0.2-1GEL/kg) and it is not profitable to bring it to the market any longer (Abberger et al. 2015). The wool is not really used at present and usually left on the place of shearing (RECC 2013, ELKANA 2014).

Nevertheless, according to calculations done by ELKANA (2014) livestock farming is profitable, especially due to cheese making. Profit and productivity can be increased if pastures and fodder are of high quality and quantity and shepherds are skillful. Especially the winter pastures are a limiting factor here as fodder quantity on the pastures is mostly insufficient and additional fodder (barley, hay) cannot be afforded by all farms. Pasture productivity might be decreasing due to overgrazing and an increase of droughts. The calculations revealed that the final profit from sheep farming (including cheese making) can range from 57,250 GEL per year and 1000-head flock to 69,250, depending on the pasture use agreement on the winter pastures (lease or sublease contract). Incomes from sheep farming without cheese making are lower but still profitable (29,250 GEL to 42,250 GEL for 1000 head-flock). It has to be kept in mind that export of livestock for selling played a role in the past and market stability is very low in this regard. Thus also profitability may vary strongly. Another calculation is indicating a range from 16,550 to 28,050 GEL per year and 1000-head flock (Gonashvili et al. 2013).

According to ELKANA, the number of sheep, as well as the number of the people interested in sheep farming has increased. Data available to judge this development is very limited. RECC (2013) found that there are little income alternatives as profitable for the Tush sheep farmers.

Problems

The main problems related to transhumant livestock farming identified in different studies in Vashlovani and Tusheti (ELKANA 2014, RECC 2013, Abberger et al. 2015, Kochlamazashvili et al. 2014), are:

- Lack and/or bad quality of infrastructure
 - No electricity on farms
 - No telephone communication

- Bad access roads
- Few drinking and watering places
- Poor state of tourist infrastructure (lack of sanitary/hygiene conditions, poor state of places for overnight stay, lack of a first-aid units)
- Milking and shearing equipment, facilities and storage
- Lack of cheese production facilities
- Infections and diseases, distance to veterinary service, absence of veterinary service, veterinary preparations and insurance
- Lack of pastures especially for winter grazing
- Overgrazing and degradation of pastures (intermediate, but also summer pastures)
- Lack of land or finances to provide additional winter fodder
- Lack of skilled personnel for sheep herding, lack of motivation and willingness among young people to become shepherds
- Predators such as wolves, bears, jackals and caracals (increased risk of attacks due to the lack of control of predators)
- Low prices and no market to sell wool
- Problems with migration route/drove-way (see above)
- Lack of sheep and sheep product markets
- Lack of insurance for livestock (risks: diseases, mortality, predators)
- Lack of knowledge in livestock farming (veterinary, milk processing, marketing, food safety standards)
- Lack of planning and management of pasture use; public registry documentation is not complete in regard to ownership

Gender issues

In general, there is little data on gender aspects in regard to natural resource management, land use or conservation in the target area. Especially on the level of local municipalities this topic is not discussed much. Gender aspects are not taken into account sufficiently. There are also no specific events or programmes to promote vulnerable or underprivileged groups in this regard.

In regard to land use, most available data does not differentiate according to gender. The exception is transhumant sheep farming, of which we know that there is a strong differentiation between men and women in the families and communities and women do not actively participate in sheep herding and migration. Especially on the winter pastures women do not accompany herders and livestock owners but are responsible for the housekeeping of the winter houses and take over management responsibilities while their husbands are away. For other land use activities, women are more actively involved, e.g. in cow-keeping. Women are running the guesthouses with technical support by men while those are focusing on tourist guidance and transport. Handicraft is a traditional activity of women creating also an income. Gardening and crop production is done by both women and men. However, it can be said that in general the women only represents the farm or business leader if there is no man in the family.

2.4.3. Stakeholders of a possible BR

Systematic stakeholder involvement is important for the planning and establishment of the BR, but also for its later functioning. The identification of stakeholders was based on the revision of existing documents and materials of on-going projects regarding the PAs. After conducting stakeholder workshops and interviews in February 2016 the stakeholder map was amended and extended.

The purpose of the stakeholder mapping is:

- Identification of all possible interested actors of the potential BR at the initial stage;
- Identification of all possible actors that might be impacted by a potential BR;
- To identify and visualize possible relevant BR actors

The degree of interest and influence of the stakeholders is dynamic. Thus this stakeholder map shows a snapshot of the current situation. Also in upcoming next steps towards a possible BR the stakeholder map needs to be evaluated and changed, if needed. Based on the interests and influence of the stakeholders the three main groups can be distinguished:

- Key stakeholders
- Primary stakeholders
- Secondary stakeholders

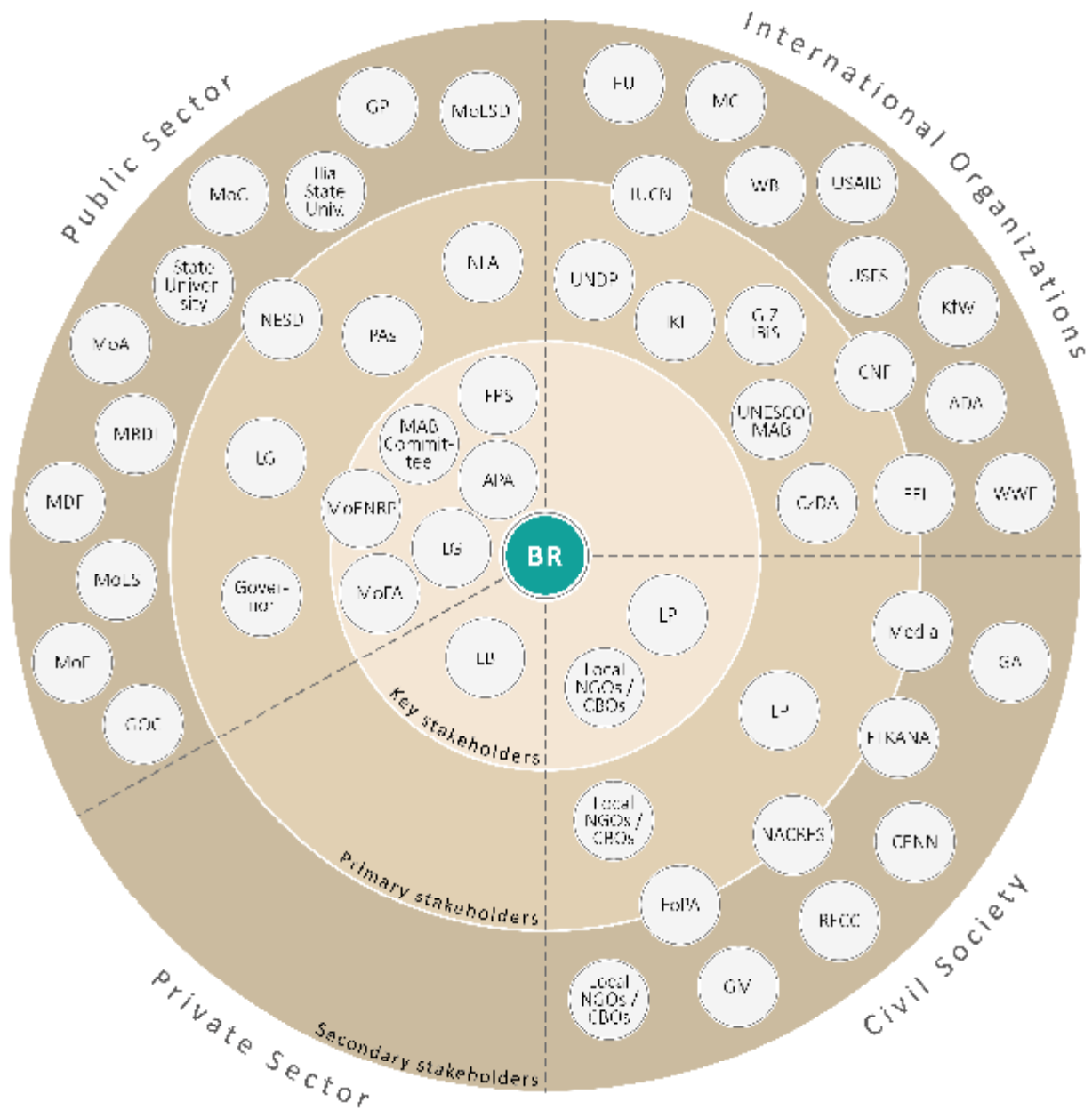
Key stakeholders are those actors who have opportunity to apply knowledge and capacity or its status and power to influence significantly the BR development process. Without support of those key stakeholders, objectives usually are not achieved. Among such stakeholders are distinguished so called „veto players“, who have the possibility to stop the project implementation. For the planned BR, key stakeholders might be: Ministry of Foreign Affairs (UNESCO Commission Georgia), Georgian MAB Committee; Ministry of Environment and Natural Resources Protection (MoENRP) with Forest Policy Service (FPS) and Agency of Protected Areas (APA) as project main partners from the state side and local self-government (Gamgeoba and Sakrebulo) from Akhmeta and Dedoplistskaro municipalities and local non-governmental organisations (NGO's), community based organisations (CBO's), local population and local businesses being representatives of possible buffer and transition zones of a potential BR.

Primary stakeholders are those, who will be directly influenced by the project. In this case it is important to define those actors who could be positively or negatively impacted due to the project implementation. Among such type of actors are local people that are economically active and/or run businesses in the target area (Akhmeta and Dedoplistskaro population); the Municipal and Regional governance structures within the project impact area (Akhmeta and Dedoplistskaro municipality and Kakheti regional government); other PAs that are present within the project area, (TPA, VPA, three natural monuments, possibly Chachuna PA); Sectorial ministries and their agencies (areas which are under the management of the NFA, FPS, NESD of the MoENRP will fall under the project impact area); International Climate Initiative (IKI) as project implementer, UNESCO as a possible partner for the project and potential BR, international organisations that are implementing the projects in the target area (UNDP, GIZ, CDA).

Secondary stakeholders are actors that are involved in the project indirectly or temporarily. It should be noted that the stakeholders that fall in this group can be moved to the group of primary stakeholders group during the process of BR preparation. At this stage secondary stakeholders are: ICC of MAB Programme, Parliament of Georgia and its sectorial committees of Environment Protection and Natural Resources, Agrarian issues, Education, Science and Culture; Relevant ministries (see visual stakeholder map in and table in Annex 4); Academic institutions like Ivane Javakhishvili State University, Ilia state university; International donors and their projects like the EU (projects such as: FLAG, TWINNING, ENPARD), World Bank, GIZ or USAID; International NGO's like IUCN or CNF; National NGO's like NACRES, Regional Environmental Centre Caucasus (RECC); Local NGO's and Community Based Organizations (CBO) and Media (please see stakeholder map in and table in Annex 4 for the complete list of secondary stakeholders). More detailed information on the stakeholders is also given in Annex 4.

There are a number of Non-Governmental Organizations (NGOs) actively involved in the regional development processes in Kakheti. In regard to the project objectives, the organizations that have direct interests in the development of PAs in the Kakheti region are of importance. Among them are the associations of Friends of PAs, which were established with the help of the IUCN South Caucasus program office (The Associations of Friends of TPA, The Associations of Friends of VPA). The mandate and purpose of these organizations are (i) to contribute to nature conservation activities on the grounds, (ii) facilitate the development of sustainable tourism, (iii) to support the local population and environmental awareness.

There are other local NGOs in Kakheti that are active in the field of socio-economy, agriculture, tourism, environment and education. The information on the organizations relevant to the BR establishment is also presented in Annex 4. As in most regions of Georgia, the activities of these local NGOs' are often project-based which means that they are active only when they have a project running and tend to become "dormant" when they have no on-going project.



| | | | |
|---------------------|--|--------|---|
| ADA | Austrian Development Agency | MDF | Municipal Development Fund |
| APA | Agency of Protected Areas | MoA | Ministry of Agriculture (especially the Agriculture Cooperative Development Agency, Agriculture Projects Management Agency and National Food Agency) |
| CENN | Caucasus Environment NGO Network | MoC | Ministry of Culture |
| CNF | Caucasus Nature Fund | MoF | Ministry of Energy |
| CzDA | Czech Development Agency | MoENRP | Ministry of Environment and Natural Resources Protection (especially the National Tourism Administration, Spatial Planning and Construction Policy Department and Sustainable Development Department) |
| ELKANA | Biological Farming Association | MoES | Ministry of Education and Science |
| EU | European Union (FLAG, TWINNING, ENPARD) | MoESD | Ministry of Economy and Sustainable Development (especially the National Tourism Administration, Spatial Planning and Construction Policy Department and Sustainable Development Department) |
| FFI | Flora Fauna International | MoFA | Ministry of Foreign Affairs – Department of International Cultural and Humanitarian Relations |
| FoPA | Friends of Protected Areas Associations | MRDI | Ministry of Regional Development and Infrastructure |
| FPS | Forest Policy Service (MoENRP) | NESA | National Environmental Supervision Department |
| GA | Green Alternative | NFA | National Forest Agency |
| GIZ IBIS | Integrated Biodiversity Management in the South Caucasus | PAs | Administrations of protected areas |
| GM | Green Movement | RFCC | Regional Environmental Centre Caucasus |
| GOC | The Georgian Orthodox Church | SBP | Service of Biodiversity Protection (MoENRP) |
| Governor | Administration of the state attorney-governor in Kakheti | UNDP | United Nations Development Programme |
| GP | Parliament of Georgia | UNESCO | UNESCO Man and Biosphere Programme (including ICC) |
| IKI | International Climate Initiative | MAB | University |
| IUCN | International Union for Nature Conservation | Univ. | University |
| KfW | Kreditanstalt für Wiederaufbau | USAID | United States Agency for International Development |
| LB | Local businesses | USFS | United States Forest Service |
| LG | Local government (Gamsgeoba and Sakrebulo) | WB | World Bank |
| Local NGOs and CBOs | Local non-governmental and community-based organisations | WWF | World Wide Fund for Nature |
| LP | Local population | | |
| MAB Committee | Georgian MAB Committee | | |
| MC | Mercy Corps | | |

Figure 20: Stakeholder map for BR development in the target region (own compilation)

2.5. Institutional and administrative situation

This chapter gives an overview of the responsibilities, tasks and possible interfaces and roles of all relevant institutions and government line agencies in regard to establishing a BR in Georgia.

Table 12: Tasks, capacities and possible interfaces and roles of relevant institutions in Georgia and Kakheti

| Institution | Tasks | Interface with a potential biosphere reserve in Kakheti | Possible role/s | Capacity |
|--|---|--|--|--|
| Ministry of Environment and Natural Resources Protection (MoENRP) | The ministry regulates activities related to protection of the environment and natural resources. | The Ministry has been a leading institution in the process of exploring BR establishment opportunities thus far. BR is mostly perceived as an environmental concept (more so than the broader concept of sustainable development). | Responsible Ministry and implementation partner of the project, including biodiversity conservation and natural resource use. | Weaker financial and political influence in relations to other ministries. Stronger capacity within its legal entities of public law due to more flexibility to manage; stronger presence on the ground. |
| Department of Forest Policy | The Department supports the development of forest policy in the country and its implementation, reforms within the sector, and the increase of capacity of forestry-related organs. | Department has been closely involved in the pre-feasibility study and then feasibility study process. | Department is mainly concerned with the forest policy. It could become part of the participatory governance platform to ensure that the forest policy considers the BR matters and vice-versa. | Stronger human capacity; Certain level of trust within the Ministry; familiarity with the concept of BR. No local representatives. |
| National Forestry Agency (MoENRP), Legal Entity of Public Law, and their 9 regional representatives across Georgia | Implementation of forest policy including ecological, economic and political aspects of forest management, as part of national development strategy and stable development of the country. Regional representations are responsible for implementing the forest policy in respective regions. | Forests within protected areas are managed by protected areas agency. Forests outside of protected areas would be the responsibility for the National Forest Agency. | Potential partner for forests outside of PAs. | Relative flexibility in management due to being LEPL; Understaffed; Undergoing reforms. |

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| <p>Agency of Protected Areas (APA), Legal Entity of Public Law under the MoENRP.</p> | <p>The Agency's primary responsibility is to manage Georgia's strict nature reserves, national parks, natural monuments, managed reserves, protected landscapes, world heritage sites and wetland sites of international importance.</p> | <p>Currently the only place that a BR concept exists is the Law on the System of Protected Areas. This gives APA currently a more definite role in the process. Moreover, a core area, which is mandatory for the UNESCO concept, is most likely to be under the management of APA.</p> | <p>Potential leading governmental entity in the process coordinating the participatory governance platform A co-manager of a BR</p> | <p>Relatively strong institutional capacity due to being LEPL. Moderate human capacity. Some experience in coordinating participatory processes for managing natural resources.</p> |
| <p>Tusheti National Park Administration under APA</p> | <p>Territorial subunit of the APA, responsible for the management of the National Park and for liaison with the relevant State Institutions and other stakeholders.</p> | <p>In theory, the activities include protection of the NP, enforcement of the conservation regime, liaison with other institutions, control of natural resource use, research and monitoring, promotion/ organization of sustainable tourism, education and communication.</p> | <p>Key actor during project implementation</p> | <p>Experience in engaging small businesses around the concept of nature tourism. Strong local presence.</p> |
| <p>Tusheti Protected Landscape, under the municipality of Akhmeta</p> | <p>Management of the protected landscape as part of the protected areas of Tusheti.</p> | <p>Protected landscape is potentially a buffer or a transitional zone for a BR.</p> | <p>Key actor during project implementation</p> | <p>Limited financial capacity as it is under the municipality.</p> |
| <p>Vashlovani Protected Areas Administration under APA</p> | <p>Territorial subunit of the APA, responsible for the management of the National Park and for liaison with the relevant State Institutions and other stakeholders.</p> | <p>In theory, the activities include protection of the NP, enforcement of the conservation regime, liaison with other institutions, control of natural resource use, research and monitoring, promotion/ organization of sustainable tourism, education and communication.</p> | <p>Key actor during project implementation.</p> | <p>Experience in engaging small businesses around the concept of nature tourism. Strong local presence.</p> |
| <p>Biodiversity Protection Division (under MoENRP)</p> | <p>Development and implementation of policy and legislation for biodiversity conservation inside and outside protected areas.</p> | <p>Provides expert advice to the Department of Natural Resources Licensing of the Ministry of Economic Development; hosts various convention focal points; development of national biodiversity</p> | <p>A potential role regarding policy development for biodiversity monitoring and the development.</p> | <p>Relatively weaker presence on the ground. Understaffed.</p> |

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| | | monitoring system; implementation of relevant MEAs (e.g. CBD). Responsible for all Red-Listed species; Functions still not clearly delineated from those of the APA. | | |
| Ministry of Sustainable Economic Development of Georgia | Developing and implementing economic policy of the country. | Overall economic direction of the country and programs that support it. Currently the migratory routes for sheep are within the Ministry's ownership to be transferred to the Ministry of Agriculture once the property issues are settled. | Promotion and support of various economic activities within BR through its agencies such as tourism department. Necessary partner for migratory routes within BR. | One of the more influential ministries. Capacity to promote BR as a sustainable economic development opportunity. |
| Georgian National Tourism Administration under the Ministry of Economic Development Legal Entity of Public Law | Ensures sustainable tourism development through positioning Georgia as a unique travel destination on the international tourist map, improving visitor experience and maximizing their expenditures to significantly contribute to the national economy by effective cooperation with strategic partners. | The agency can promote the BR as a tourism destination, offer training to guesthouse and other small business owners within BR. It can install signs on roads, etc. | Important cooperation partner in tourism related activities of a BR. | Stronger institutional capacity; Some presence on the ground. |
| Department of Sustainable Development under the Ministry of Economic Development | Sustainable economic policies and their implementation. | Sustainable nature tourism, sheep herding, agribusinesses, etc. | Important cooperation partner. Potential focal point within the Ministry of Economy. | Relatively weaker department within the Ministry with limited focus on renewable energy. |
| Ministry of Regional Development and Infrastructure and Municipal Development Fund (MDF) | Regional development policy and infrastructure. Development and implementation of policy, legislation and planning instruments for the coordinated development. of Georgia's regions. Key role as a coordination agency for | Road maintenance, development of integral special planning process; Recent projects in Dardlo and Kakheti for tourism development potential through Municipal Development Fund. | Potential consultation partner should be engaged for advice on further developments regarding regional planning policies, laws and methods. Collaborates closely with the Regional Offices | No local presence; focused mostly on infrastructure. Absent capacity in terms of natural and cultural heritage. |

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| | infrastructure development projects. | | of the State Representatives – Governors, could be involved in the joint planning/ implementation of the project. | |
| Ministry of Agriculture, National Food Agency, Department of Veterinary Services. | Development and implementation of unified government policy on the development of agriculture in Georgia. | Responsible for the migratory route for livestock farming once the Ministry of Economy settles the ownership issues and conflicts. Responsible for requirements to which farmers within PAs have to comply such as vaccination. | Important partner in the project implementation. | Limited financial capacity. Limited power to settle property-related issue and land use challenges at this stage. |
| Ministry of Internal Affairs, Border Police | Protection of the land and sea borders of Georgia. | Presence at borders with the Russian Federation (Tusheti) and Azerbaijan (Vashlovani). | Important partner of nature protection/ sustainable development (e.g tourism development); due to presence in remote parts of the Municipality. Potentially a bigger role in prospects for trans-boundary BRs. | Presence at the police. Limited capacity and knowledge of nature conservation and cultural heritage. |
| Ministry of Foreign Affairs: National Commission for UNESCO | Coordination and promotion of Georgia's cooperation with UNESCO; | Interested in promoting activities related to UNESCO in Georgia; though BRs have never been discussed | Supporting role in relation to the establishment of any UNESCO-designated BR or World Heritage Site Kakheti. | Limited capacity to be active at the sub-national level. |
| Ministry of Culture and Monument Protection of Georgia | Elaboration and conduction of State policy on protection and development of Cultural Heritage; supervision on protection, the investigation and promotion of cultural heritage. | Significant number of national monuments is within the region of Kakheti. Potential BR could cover number of them. Their strategy 2025 which is being elaborated now is region-specific and will cover Kakheti separately. | An important partner in coordinating activities towards the preservation of cultural monuments. | Limited financial capacity for preservation of sites. |
| Ministry of Energy | Exploit existing energy resources, diversify imported energy supply, ensure energy safety, develop alternative energy | Potential small hydropower station in Kakheti Region, to be financed by | Important role for the promotion of the establishment of small hydropower stations; partner in | Influential ministry as head of the priority economic sector in |

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| | sources (long-term goal of meeting the entire demand on electricity by local hydropower resources). | investors. | piloting new innovative schemes of energy trade for the benefit of local communities. | Georgia. |
| Georgian Academy of Sciences: Man and Biosphere (MAB) National Committee | Promotion of implementation of the UNESCO MAB Programme in Georgia. | The committee is supposed to be a body coordinating the MAB-related activities. Elaboration of a draft concept “Comparative characteristics of the regions for the formation of the first BR in Georgia”. Promotion of the establishment of BRs | Future role depends on whether BR is established, and on the capacity development. | Weak. Practically non-functional despite its long member list. |
| Office of State Representative – Governor in Kakheti Region | Represent the State at the level of the region; coordinate policy implementation at the regional and sub-regional level; consulted by municipalities regarding local budget allocations. Representatives at regional level not legally established, although fulfilling their de-facto role. | Department of Relations with Local Government and Public Organs; responsible for the collaboration with Municipalities. | Strong role as a communication facilitator and advisor to the project; should be represented in consultation and cooperation mechanisms that are to be established. | Limited capacity to liaison with central organs but stronger capacity to coordinate across municipalities. |
| Sakrebulo of Akhmeta and Dedoplistakro Municipalities (or any other municipalities of relevance) | Local council, representative body of local self-government of a Municipality. | Leading representative body of a Municipality. Interest is safeguarding local participation in the decision making on all issues of relevance to the Municipality. | Sakrebulo (and not the Gamgeoba) should be the main local partner in the decision making processes; leading role in any communication or coordination mechanisms for NP + SZ/ BR set-up. | Weak financial resources, weak project implementation and weak convening powers. |
| Akhmeta and Dedoplistakro Gamgeoba | Executive government body of the Akhmeta Municipality. Implementation of the decisions of the Sakrebulo and delivery of public services to the Municipality. <ul style="list-style-type: none"> • Administrative Service • Records Management • Human resource and internal | Responsible for implementing a wide range of activities. Interests: maximize the development effect, minimize land use restrictions, and strengthen his position within the Municipality. Outside actors perceived as undermining his authority. | Important local implementation partners, involved in communication and coordination mechanisms, dissemination of information. | Weak financial resources, weak project implementation and weak convening powers. |

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|--|---|--|--|--|
| | <p>coordination unit</p> <ul style="list-style-type: none">• Legal Office• Budget and Finance Office• Department of Finance• Procurement Division• Property management, economic development, statistics, infrastructure, spatial planning, architecture and construction services• Infrastructure, spatial arrangement, construction and architecture department• Property Management, Economic Development, Planning and Statistics• Education, Culture, Sports and Youth unit• Internal Audit Service• Supervisory Service• Department of Health and Social Services | | | |
|--|---|--|--|--|

2.6. Legal framework for biosphere reserve development

BRs are not only mentioned in strategies and action plans (like the ECP Caucasus or the NBSAP of Georgia), they are also anchored in the Georgian law, specifically in the Law “On the System of Protected Areas” which was adopted in 1996.

Within this feasibility study an analysis of the legal framework in Georgia in regard to BRs was commissioned. The report can be found in Annex 5. The law was analysed based on the UNESCO criteria and concept for BRs as stated in the Statutory Framework and the Seville Strategy (UNESCO 1996). It outlines gaps and shortcomings in the existing legal framework, gives recommendations for needed and possible amendments and discusses suitable options for realising such amendments.

These are the main critical points in the existing law revealed by the analysis:

- The aims of a BR are not defined according to the UNESCO concept as the aim of sustainable economic development is currently missing in the Georgian law.
- The legislative regulation of the zonation of a BR needs some amendments in order to be in full accordance with the UNESCO concept. Local peculiarities should be taken into account sufficiently.

These are additional recommendations provided in the assessment:

- The procedure of granting or withdrawing the status of the BR to a territory should be defined in the legislation.
- Regulations regarding property rights, especially in the transition zone, should be critically reviewed and amended, if necessary. The necessity of private property and related promotion of sustainable development on private land could be stressed.
- Seeing that BRs are a broader concept for regional development reaching further than the PA system, the Georgian Law on the system of PAs should clearly define the attitude of the national legislation to the status of BR and the status of a PA.

Three options to build a suitable legislative framework with regard to BRs are presented and discussed, which should be further elaborated in the future:

- Regulation of the issue based on the Georgian Law on the System of PAs
- Regulation of the issue based on the Law on the Protection of Biological Diversity
- Regulation of the issue by means of a separate law on BRs

The legal analysis provided in Annex 5 strongly takes into account the Georgian legal tradition in combination with UNESCO criteria and guidelines. In general it must be said that the UNESCO does not give many strict guidelines in regard to legal issues except for the core zone of a BR which needs to be legally secured. UNESCO requirements in regard to governance are outlined in more detail in subchapter 3.1.3. A reference to a model law proposition provided by the UNESCO can also be found there.

III. Assessment of feasibility

3.1. UNESCO concept of biosphere reserves

3.1.1. General framework and criteria

The Man and the Biosphere Programme (MAB) was launched by UNESCO in 1971 as an intergovernmental scientific programme that aims to establish a basis for the improvement of relationships between people and their environments. BRs are the implementation sites of this programme. Currently there are 669 sites in 120 countries all over the world, including 16 transboundary sites, all unified in the World Network of BRs (WNBR).

The central guiding document for BRs is the Seville Strategy and the Statutory Framework of the WNBR published in 1996. The criteria for BR designation are listed in Article 4 (see box 1).

Box 1: Designation criteria for biosphere reserves

(from Article 4, Statutory Framework of the WNBR, UNESCO 1996)

- The area should encompass a mosaic of ecological systems **representative of major biogeographic regions**, including a gradation of human interventions.
- It should be of significance for biological diversity conservation.
- It should provide an opportunity to explore and **demonstrate approaches to sustainable development** on a regional scale.
- It should have an **appropriate size** to support the three functions of BRs, as set out in Article 3 of the Statutory Framework.
- It should promote these functions, through appropriate **land-use planning and zonation**, recognising the following:
 - Legally constituted **core areas**, or areas devoted to long-term protection, according to the conservation objectives of the BR, and of sufficient size to meet these objectives.
 - **Buffer zones** clearly identified and surrounding or contiguous to the core area, where only activities compatible with the conservation objectives can take place.
 - **Transition areas** where sustainable resource management practices are promoted and developed.
- Organizational arrangements should be made for the **involvement and participation** of a suitable range of, inter alia, public authorities, local communities and private interests, in the design and carrying out the functions of a BR.
- In addition, provisions should be made for:
 - Mechanisms to **manage human use** and activities in the **buffer zone**.
 - A **management policy and management plan** for the area as a BR.
 - A **designated authority** or mechanism to implement this policy and plan.
 - Programs for research, monitoring, education and training.

The main characteristics of a BR are the three interconnected functions, the zoning scheme which features three zones (see Figure 21), a multi-stakeholder approach which stresses the

involvement of local communities in management, conflict resolution in the field of natural resource use, integration of cultural and biological diversity and sustainable development practices.



Figure 21: Zonation scheme of a UNESCO BR

Sustainable development should be seen as an overall guiding principle in all BRs. The most commonly quoted definition is from the so called Brundtland Report published by the United Nations World Commission on Environment and Development in 1987: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs". This concept was a key driver behind the Rio Earth Summit in 1992. Sustainable development is the overarching theme of the three Rio Conventions: The Convention on Biological Diversity (CBD), the UN Convention to Combat Desertification (UNCCD) and the UN Framework Convention on Climate Change (UNFCCC). Sustainable development has been identified as one of five key priorities by the United Nations (UN) Secretary General Ban Ki-Moon in the 2012 UN Secretary-General's five year action agenda. According to the World Bank (2016) "sustainable development recognizes that growth must be both inclusive and environmentally sound to reduce poverty and build shared prosperity for today's population and to continue to meet the needs of future generations. It must be efficient with resources and carefully planned to deliver immediate and long-term benefits for people, planet, and prosperity".

Several other documents of the MAB programme give additional guidance for BR development. The Madrid Action Plan (MAP) 2008-2013 was developed to further elevate BRs as principal internationally designated areas and learning sites for sustainable development (UNESCO 2008). It stresses the need for testing and applying policies for adaptation to and mitigation of climate change. MAB recently finalised the new Lima Action Plan to guide the programme and its BRs to implement the MAB Strategy 2015-2025. According to this strategy MAB stresses the role of BRs for conserving biodiversity, restoring and enhancing ecosystem services, and fostering the

sustainable use of natural resources; for building sustainable, healthy, and equitable economies, societies and thriving human settlements; and for empowering people to mitigate and adapt to climate change and other aspects of global environmental change (UNESCO 2015a). To contribute to reaching the Sustainable Development Goals is a central aim in this strategy.

MAB is also planning to ensure that the WNBR consists of effectively functioning models for sustainable development by implementing an effective periodic review process, by improving governance and collaboration within the WNBR and by developing effective external partnerships (UNESCO 2015a). The International Co-ordinating Council (ICC) of the MAB adopted an exit strategy by which it wants to improve the credibility and quality of the WNBR through effective periodic reviewing of BRs and withdrawing of the BR status from sites not meeting the criteria. The exit strategy still concerned 262 sites in 74 countries in August 2015. Final decisions on the exit strategy are expected in 2017 based on periodic reviews of the concerned BRs (UNESCO 2015b).

3.1.2. General procedure towards a BR nomination

The designation procedure for BRs is stated in Article 5 of the Statutory Framework of the WNBR (UNESCO 1995). The council responsible for designation is the ICC of the MAB programme. The ICC is the main MAB governing body, also called MAB Council. It consists of 34 Member States elected by UNESCO's biennial General Conference.

This is the general procedure of designation according to Article 5 of the Statutory Framework (UNESCO 1995):

1. States review potential sites, taking into account the criteria of Article 4 in the Statutory Framework and compile a nomination form for a specific potential BR including all supporting documentation.
2. States forward the filled nomination form⁵ with supporting documentation to the UNESCO secretariat (through national MAB Committees where appropriate).
3. The secretariat verifies the content of the nomination file and supporting documentation. In case of an incomplete nomination file, the secretariat requests the missing information from the nominating State.
4. The Advisory Committee for BRs⁶ is consulted to review the nomination and formulate recommendations to the ICC.
5. The ICC of the MAB programme takes a decision on the nomination for designation.

⁵ Nomination file can be downloaded from the UNESCO website:

http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/SC/pdf/Final_NominationForm_English.doc

⁶ The International Advisory Committee for BRs is the primary scientific and technical Committee body advising the ICC of the MAB Programme and its WNBR and the Director General of UNESCO on matters pertaining to the WNBR.

6. The Director-General of UNESCO notifies the respective State of the decision taken by the ICC.

The unfilled nomination form is a document of 28 pages without annexes. It is required to state in detail how the proposed region fulfils the three functions of BRs and how it meets the criteria of BRs stated in Article 4 of the Statutory Framework. The exact location and zonation of the potential BR must be clearly outlined and displayed in maps. Also the governance and management arrangements for the proposed region need to be presented clearly.

This means that a BR can only be nominated if the area and management arrangements are certain, which requires that all stakeholders have agreed on a detailed concept for the proposed region. This requires intensive consultation and consensus-building work. Also innovative pioneer projects and initiatives in the field of sustainable economic development need time to get going. Thus it is required to have a phase of BR development prior to the actual nomination which can last for several years.

In regard to the BR development in Kakheti it is necessary to start closer communication with the MAB Programme and UNESCO via the National Commission of UNESCO in Georgia in order to prepare a possible nomination of a BR and to get support and advice.

3.1.3. Requirements by UNESCO concerning legal and management arrangements for biosphere reserve nomination

Legislation for Biosphere Reserves

The question of the recognition of the BR concept in the framework of national legislations has been the subject of several meetings and discussions within the MAB Programme (e.g. 21st ICC MAB session 2009, 22nd ICC MAB session 2010, sub-regional workshop of UNESCO Cluster Office Moscow⁷), especially after the MAP of the MAB Programme (UNESCO 2008) made a specific recommendation in this direction. The MAP aims at “enhanced legal recognition of BRs” (Target 11) that should be fostered by action 11.1 to “encourage states to include BRs in their own legislation”. Also in the final evaluation of the MAP strategy, BR managers strongly stressed the importance of having a well-defined management and governance (Popelier & Vaessen 2014).

The relevant governing texts for the establishment of BRs are the Seville Strategy and the Statutory Framework of the WNB (UNESCO 1996). Neither of these two texts is legally binding, but member states are committed to apply them after they adopted the text. They, however, are not obliged to transpose the texts into national law (Bonnin & Jardin 2009, Popelier & Vaessen 2014). Still, once a state decides to include BRs in its national legislation, both texts must be reflected in it, according to Bonnin and Jardin (2009). Their study revealed, though, that the majority of states with BRs that were considered in the study did not translate the concept of

⁷ September 2010, topic “Biosphere reserve concept in the framework of national legislation”, report can be found under <http://unesdoc.unesco.org/images/0019/001904/190418e.pdf>

BR into their national law yet (including states like Croatia, Italy, Poland or Slovenia). It was also shown that such translations into national law can look very different and thus different approaches and individual solutions are possible (Elbakidze et al. 2013, Bonnin and Jardin 2009). For states wishing to translate the BR concept into their national legislation, the MAB programme proposed a “model law” in 2009 that serves as a blue-print (Bonnin and Jardin 2009) and can be found in Annex 6. However, on the 22nd meeting of ICC MAB the delegates in general preferred to avoid prescriptive approaches to the implementation of the MAP or other frameworks (UNESCO 2010). Some delegates also stressed the importance of flexibility in the application and adaptation of the model law at the national and regional levels due to the diversity of situations and contexts. This is supported by Elbakidze et al. (2013) who also stress that a stronger legal support might not be needed as the idea of BRs, which is sustainable development realized on a regional scale, requires an integrated planning approach across sectors, disciplines and scales which can or even must refer to many formal and informal institutions.

Therefore, an absent or incomplete translation of the BR concept into the national legislation is not regarded as an impediment for a BR nomination by UNESCO. It is rather the characteristics and management design of the individual BR that is important and should follow the criteria given by UNESCO in the Statutory Framework (UNESCO 1996).

Management of Biosphere Reserves

As BRs are instruments for integrated management of socio-ecological systems, their management needs to address regions comprehensively: abiotic factors (climate, water, soil, and landscape in its entirety, etc.), the local communities (cultures, traditions, knowledge, heritage, etc.), their practices (fishing, forestry, agriculture, livestock breeding, tourism, etc.) and the institutional and legal settings within which they act. Consequently, BR management involves many different interventions at many different levels at the same time, for example protecting individual species, improving the water cycle, supporting the marketing of agricultural products, training local communities and monitoring.

BR management should furthermore focus on the harmonisation of its activities across the three zones of the BR (core, buffer and transition zone). BRs are expected to be dynamic, participatory and learning-oriented, that's why the appropriate management needs to be lean and adaptive in order to be effective. Wherever possible, the management may use and rely on existing structures, policies and laws, specific to each BR context.

In practice, each BR looks different, in goals, zonation, management and governance. This diversity of BRs as well as the uniqueness of each one is explicitly wanted by UNESCO. Each UNESCO BR is an opportunity for new institutional innovation, while being able to draw from a wealth of experience globally. BRs can transfer local concepts and traditions into institutional settings. BR management is essentially about creating opportunities and enabling local communities. The focus is rather on identifying a locally adapted solution than on blueprints to replicate. Nevertheless, the following requirements concerning BR management should be followed:

- **Management structure and staffing:** each BR needs to have a designated management entity, cooperation mechanisms for joint management of already existing authorities is possible
- **Participatory approach:** effective BRs need to support and involve local people (Objective II.1 in Seville Strategy) with the help of management strategies such as conflict resolution, provision of local benefits, involvement of stakeholders in decision-making and management (a local consultative framework is necessary for this), local communities and other local agents should be trained in order to allow their full participation in planning, management and monitoring processes of BRs (Objective III.4 in Seville Strategy) (see also schematic overview for types and levels of participation in Figure 22)
- **Institutional mechanisms:** harmonization of activities across the three types of BR zones as well as across different policies and programs (Objective II.2 In Seville Strategy), development and establishment of institutional mechanisms for such coordination and integration
- **Monitoring:** evidence-based adaptive management is supported by sound monitoring, a functional system of data management for rational use of research and monitoring results (Objective III.2 in Seville Strategy)

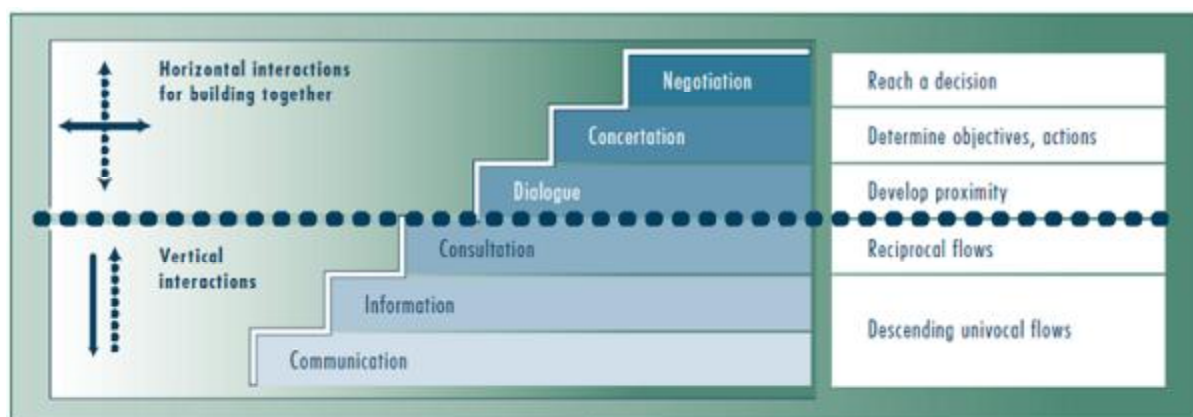


Figure 22: Types of participation in debates and decisions for BR management (Source: UNESCO)

3.1.4. Experience in governance and management of BR

In the final evaluation of the MAP presented in May 2014, BR managers stress the importance of having a well-defined management and governance structure and a coherent management plan (p. 57). The Lima Action Plan (2016-2025) states the support of effective management and governance structures (action A3.2) together with the establishment of alliances at local, regional and international level for biodiversity conservation and benefits to local people among (action A1.3) their strategic actions.

Crucially, the management entity needs to be vested with the necessary powers to safeguard the protection of the core zones and the integration of activities across the three BR zones. As BRs are expected to be dynamic, participatory and learning-oriented, the appropriate management

needs to be lean and adaptive in order to be effective. Wherever possible, the management may use and rely on existing structures, policies and laws, specific to each BR context.

Existing models and experiences

Comparative studies on institutional and cooperation arrangements, its respective advantages and problems in different contexts do not really exist. These arrangements are differing a lot from case to case. A focus on many details and institutional development processes would be needed, which, in the end, would make the results hard or even impossible to compare.

In a more abstract way, the GoBi⁸ project conducted a global survey among 204 BR managers identifying factors of importance in successful BR management and governance. They found factors related to participation particularly relevant to the managers. Among 27 influence factors identified, environmental education was ranked first, while collaboration with local authorities was ranked second and community participation ranked sixth in influencing BR success. They also suggested that “Management as mutual learning” would be the most appropriate management style for BRs (Stoll-Kleemann and Welp 2008).

In a management manual for BRs compiled by the German Commission for UNESCO (2015), two main models are distinguished: the “Authority-Model” and the “NGO-Model” of BR governance. Both models have three main constituents in common:

1. A “secretariat” or “management unit” of the BR consisting of professional staff who performs full-time paid work every day in concrete activities for the BR.
2. A “management committee” or “steering committee” or “executive committee” with key decision-making power
3. An “advisory board”, which may also have a specific scientific mandate

In the “authority-model” (see Figure 23), the “secretariat” or “management unit” is more or less dependent on one ministry or even part of that ministry – the Ministry of Environment, the Ministry of Forestry or a similar ministry. The dependence can be directly through the “Directorate for Protected Areas” which in some countries is part of the ministry, in other countries is more autonomous. In similar setups, the “secretariat” or “management unit” depends on another national or provincial authority. If in this model there is a “management committee”, it is typically instituted by the respective ministry or directorate. Cooperation with local communities and other local authorities can be realized, but typically not through the management committee. There can be an advisory board, but it is rather a loose connection. The “management unit” itself typically has a sovereign mandate and “highest authority”, at least with regard to one topic, such as nature conservation. As a consequence, it is often difficult for the “management unit” to actively engage in other fields like community engagement or sustainable development. As another consequence, such “management units” are often legally only in charge of the core area, i.e. the legally PA (German Commission for UNESCO 2015).

⁸ The governance of biodiversity research project analyzed success and failures in protected area and biosphere reserve management and governance approaches (2004-2010)

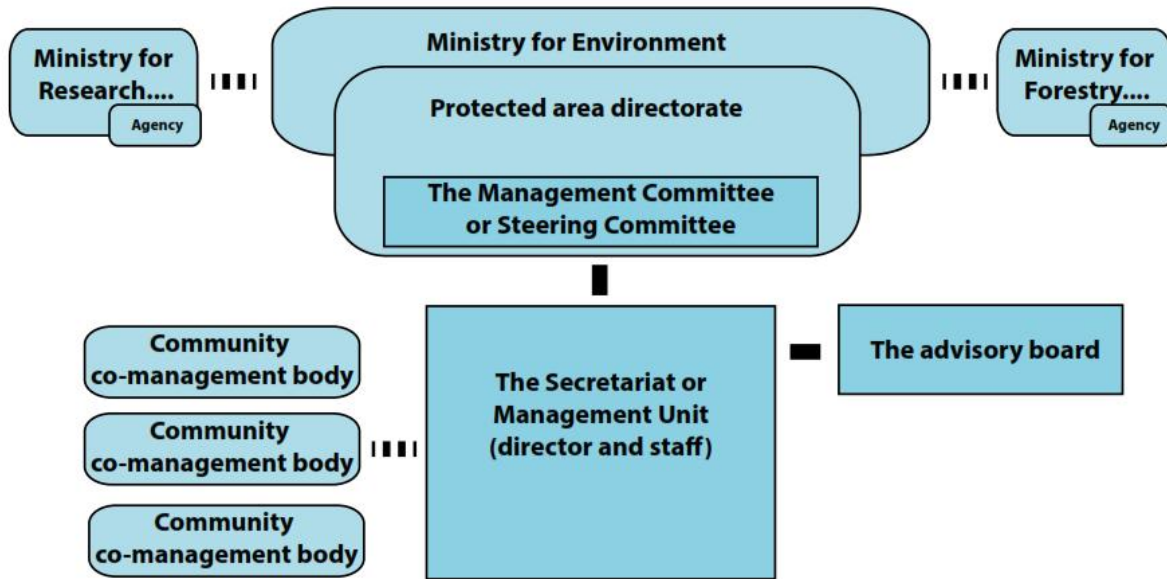


Figure 23: The "authority-model" as example for BR governance (German Commission for UNESCO 2015)

Recently, UNESCO bodies rather promote the “NGO-model” (German Commission for UNESCO 2015). This model (see Figure 24) is not yet widespread, but is already being implemented in Ethiopia and South Africa. In this model, the “management committee” as supreme decision making body is composed of several different institutions and authorities. The “management unit” therefore has less formal and authoritative or executive power such as fighting poaching, but it can be active in several thematic areas and in all zones. It can act more like a platform to bring together diverse interests and the communities can have a direct role in the supreme governance model. It can also flexibly react to new situations and offer conflict resolution. While an “authority model” BR has a sectorial relevance for at least some zones, the “NGO-model” BR managers must gain their acceptance by proving their societal relevance for communities. Its institutional arrangement must render the BR pertinent (German Commission for UNESCO 2015).

In Germany, both models are used depending on the local situation and frame. As these conditions change, also shifts of governance models applied in the same BR might become necessary which already could be observed in Germany in the past.

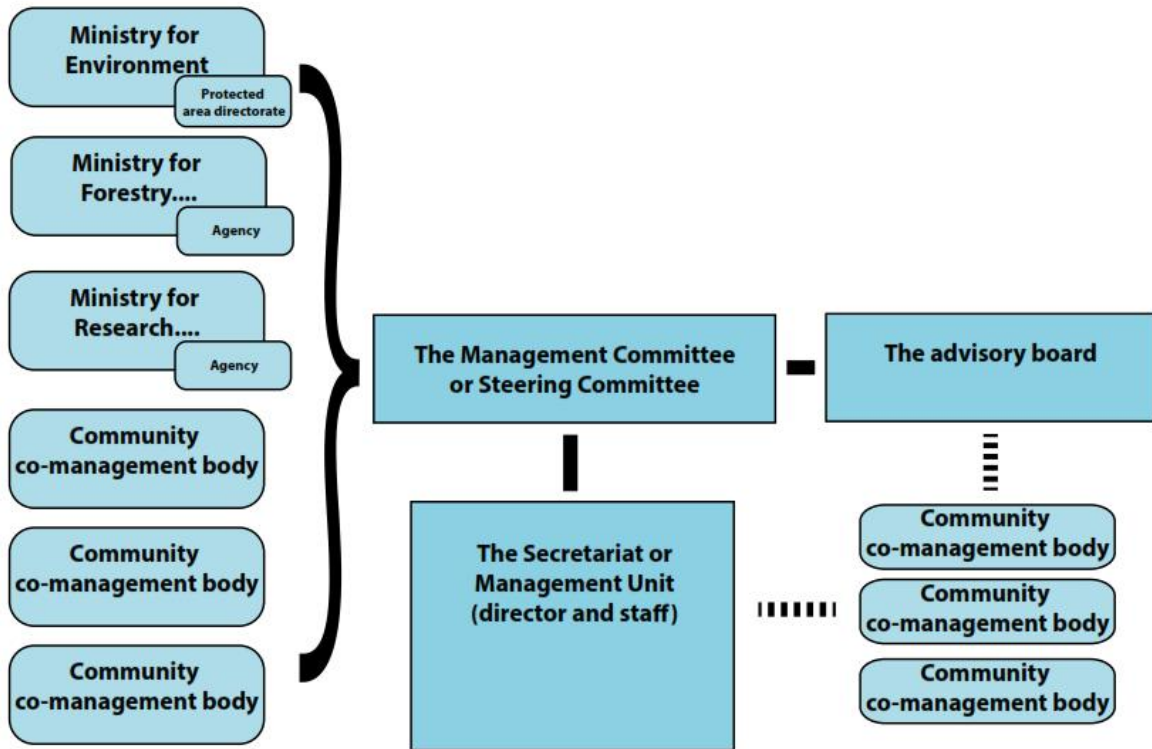


Figure 24: The "NGO-model" as example for BR governance (German Commission for UNESCO 2015)

Box 2: Case of Kristianstad Vattenrike BR in Sweden (from Olsson et al. 2007)

An analysis of the governance mechanisms in the Kristianstad Vattenrike BR (KVBR) in Sweden by Olsson et al. (2007) revealed that institutional arrangements have evolved over time. KVBR started with a cooperation initiative by a municipal organization, the Ecomuseum Kristianstad Vattenrike. They called together different municipal organizations, land owners, farmers associations, scientists and other stakeholders in order to solve conflicts regarding declining bird populations, wetland management and water quality. The objective was to manage the area at the landscape level. This cooperation on mainly municipal level was a process of connecting people, building trust, generating knowledge, defining an area for management, developing a common vision and goals and mobilizing a broad support for change.

The Ecomuseum later became the Biosphere Office, a municipal organization that is the key-node in a social network of actors. It has no power to make or enforce rules and relies on several funding sources (municipality, county, environmental protection agency). It acts as a facilitator and coordinator in the collaborative processes, but is also involved in developing policy, designing projects, resolving conflicts, coordinating and administering conservation and restoration efforts as well as producing management plans and agreements. Three other forms of organization have additionally emerged to manage the area: consultancy group, theme groups and “adhocracy” groups. The consultancy group consists of 30 members and is a forum for information, discussion, identification of common interests and conflict management. It can give recommendations and advise to the municipal executive board on land-use plans. Theme groups develop around a certain topic, currently 10 groups exist. Adhocracy groups emerge in response to a surprise or specific problem, such as environmental disasters, and dissolve when the issue is solved.

The study of Olsson et al. (2007) also serves to identify key factors for the development of meaningful cooperation mechanisms. These cooperation arrangements evolve with time and have internal organizational dynamics that are also source of renewal and reorganization for dealing with uncertainty and abrupt change. The ability to create the right links, at the right time, around the right issues in a multi-level system was listed as crucial. The authors of the abovementioned study have identified two factors as being critical in order to link organizations across multiple levels (e.g. communities with institutions): bridging organizations and leadership. The Biosphere Office is such a bridging organization, providing a key role in collective learning processes. Leadership has also been identified as critical, but not in the sense of command-and-control of hierarchical management, but in the sense of network leadership and guidance. This requires steering to hold the network together, balancing social forces and interests that enable self-organization. It involves eliciting common goals, creating an atmosphere of trust, brokering organizational and individual contributions and deploying energies in order to put into practice a strategic plan (Olsson et al. 2007).

Box 3: Governance for sustainability in Canadian Biosphere Reserves
(from Pollock 2009)

According to Pollock (2009), the analysis of the BR model reveals three main considerations for collaborative governance:

- self-organization and the formation of local governance arrangements
- the role of place-based governance for engaging citizens and public participation, and
- defining specific characteristics of collaborative processes

Another important point mentioned is governance networks. Collaborative, multi-stakeholder approaches to governance are at the heart of the BR concept in Canada, and are directly related to the formation of governance networks.

Self-organization of local governance arrangements

Decisions about organizational arrangements are made locally in Canada. Francis (in Pollock 2009) notes: “The key to success in biosphere reserves lies with establishing local organizational arrangements that can initially serve to promote and explain the concept (not only what it is, but especially what it is not), to build support from community groups and governments, [and] to help develop the functions that biosphere reserves are meant to serve...”

Following Francis (in Pollock 2009), five general patterns exist in the structure of BRs in Canada, all relying on multi-stakeholder involvement:

1. An existing organization adopts the BR function.

Usually, it is an organization that has responsibilities for a particular function or geographical area within the biosphere reserve.

Strength: The organization can devote some staff time, budget and other support in kind. Its core function is consistent with at least some of the scope expected from biosphere reserves.

Weakness: The organization may limit itself to activities consistent with its own core function, or geographic jurisdiction, and ignore or discourage staff from involvement in other areas that biosphere reserves are meant to address.

2. Two or three existing organizations agree to take on different aspects of the BR.

The assumption is that they can and will coordinate closely.

Strength: Multiple organizations can immediately offer existing capacity and better “coverage” of biosphere reserve functions.

Weakness: Each organization remains pre-occupied with its core function or jurisdiction. Gaps in effort or coverage arise.

3. A Steering Committee is set up with representatives from different organizations.

Strength: Most biosphere reserves start this way. The committee can often develop a consensus on relatively non-controversial issues such as research or information dissemination, and on low cost activities.

Weakness: Budget or other funding for biosphere reserve expenses have to be approved (and can be effectively vetoed) in higher echelons of different bureaucratic systems with resulting delays and loss of coordinated commitment and effort.

4. The BR group incorporates as a non-profit organization and appoints its own directors.

Strength: Each biosphere reserve decides on the composition of its Board, and whether or not government representatives are ex officio or full voting participants. It plans and implements its own programs.

Weakness: The resulting biosphere reserve organization can become pre-occupied with constant fund-

raising, weak or no government support, and “burn-out” among its volunteers.

5. BR group is incorporated as a membership-based organization.

Strength: This has potential for broad-based support rooted in the communities in the biosphere reserve.

Weakness: Different community groups may pressure the organization to take sides in local disputes, and the organization may be perceived as having been taken over by “particular interests.”

Place-based governance

Pollock (2009) stresses that governance should be place-based, as this creates opportunities for sustainability by linking local and regional identities to processes that engage citizens, stimulate the development of social capital, and strengthen civil society. Francis (in Pollock 2009) notes that the flexibility to develop ‘place-based’ arrangements (rather than follow a prescribed format) has been viewed favourably at local levels since it allows for change and re-organization as local circumstances change.

Multi-stakeholder collaboration

In the case of Canada, BRs have no formal regulatory power. BRs, and their associated facilitating bodies, rather help to build regional networks, long-term community capacity, and provide a forum for dialogue around common interests. This valuable role could be better profiled as a means to overcome the institutional inertia and barriers to addressing sustainable development issues.

In Canada, the development of cooperation plans has been found to be a useful tool to increase participation of a wide range of interests in BR activities. The Cooperation Plan was developed in 2002 as a tool for BR coordination and tested it in ten Canadian BRs. Plans involve local consultation and contain: background, vision, challenges, goals for the three functions of a BRs, partnership roles, and resources and strategies to achieve goals. Projects that emerge from the plans are often led and financed by partners or stakeholder groups. Signatories of the nomination form (e.g. managers of core and buffer areas) have a moral, but not a legal authority to pursue the objectives of the BR (Birtch in Pollock 2009).

Governance networks

Pollock (2009) states that BRs navigate and influence the governance layers and players around them through forming both formal and informal governance networks. These governance networks create new inter-organizational domains for legitimate, non-coercive, horizontal negotiation. The institutional framework (or the rules of engagement) is not fixed but evolves through negotiation (Pollock 2009).

In BR establishment, a lack of clear regulations for cooperation is somehow the usual case. BRs should be seen as learning and experimentation sites, not only for innovative land-use approaches, but also for new cooperation. They can be used as an arena where new processes can be used to overcome restraining government policies and procedures (Olsson et al 2007). It depends more on the will to cooperate, on capacities of organisations to provide this bridging function between different actors, and to lead processes of identification and achievement of common goals. It is more important to identify stakeholders willing to bring forward this initiative and to mutually develop new forms of cooperation, than to regulate everything beforehand. Formal regulation can/may follow when arrangements have proven to be useful, but are not necessarily required.

3.2. A biosphere reserve in Kakheti

3.2.1. Transhumance in the focus

As the link between Tusheti and Vashlovani regions is based on the transhumant livestock farmers and their herds from Tusheti, this topic is clearly a central one for the BR development. This subchapter shortly outlines a broader view on transhumance within Europe and the relation of transhumance and BRs.

Transhumance in Europe

The transhumance is a form of mobile pastoralism. It describes a “cyclical, annual movement of livestock between distinctive rangelands to exploit their seasonal growth” (Valentine 2001). Mobile pastoralism can be seen as an important but declining element of the European cultural tradition (Bunce et al. 2004). Especially European cultural landscapes in mountains were and still are influenced by this land use culture, such as in France, Spain, or Greece. It carries strong cultural but also nature and landscape conservation value.

In France transhumant systems persist in the southern part of the country where animals are transferred to mountain pastures of the Alps, the Pyrenees and the Central Range (Wolff & Fabre 2004). Mainly sheep are held to produce lamb meat. They graze on grasslands of which most are listed in Annex 1 of the EU Habitats Directive⁹. Also in France traditional drove roads are abandoned or were largely absorbed by neighbouring landowners or roads, so that trucks are the most common means of transportation for the animals (Wolff & Fabre 2004).

Transhumance is still practiced in Greece as a pastoral activity connected to certain ethnic groups such as the Sarakatsani or the Vlachs (Ispikoudis et al. 2004). The number of animals involved has dramatically decreased compared to the past and animals, mainly sheep and goats nowadays are transferred from summer to winter pastures by trucks and not by passing along the traditional drove roads on foot. Pseudo-alpine grasslands and silvopastoral systems are the most typical landscapes in Greece that were created and are still maintained by transhumance (Ispikoudis et al. 2004). The prospects of this land use are considered as unfavourable if not coordinated action is taken to promote it socially and economically. Several socio-economic factors such as a decline of rural population, a lack of qualified and willing young professionals to replace retired farmers and an intensification of land use are threatening the transhumant livestock farming. To counteract measures for improvement of infrastructure and accommodation as well as development of small dairies to meet EU standards and special marketing measures are needed (Ispikoudis et al. 2004).

⁹ The EU Habitats Directive ensures the conservation of a wide range of rare, threatened or endemic animal and plant species (see http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm for details). Georgia is following this directive by designating Emerald Sites which is currently in progress. Habitats in Annex I of this directive describe “Natural habitat types of community interest whose conservation requires the designation of special areas of conservation”.

Also on the Iberian Peninsula a high proportion of the land and habitats is shaped by extensive grazing. According to Gómez Sal (2004) the grazing has an “essential role in the origin and maintenance of some of the most outstanding landscapes, habitats and ecosystems in Spain”. A variety of transhumant systems with a long history can be found there, e.g. in the northern mountains near the Atlantic Ocean (short-distance transhumance) but also in southern and central Spain (transhumance over longer distances). A variety of livestock species are involved such as different breeds of sheep, cattle and goat (Gómez Sal 2004). The drove roads for migration (so called cañadas) in the long-distance transhumance are rather wide and have a high protection level which indicates their past importance, when the “Royal Drove Roads” were designed to serve the strategic Merino wool industry which was important for the economy of Spain during the 16th to 18th centuries. There is a strong legal framework to maintain the cañadas and still around 800,000 sheep and 50,000 cattle are driven along these routes in seasonal migration (García Martín 2004, Casas 2004). There are various political and legal activities undertaken in Spain in order to conserve and recover the drove road network in Spain since 1995. Especially in Andalusia the regional government implements programs to include the drove road networks into regional planning (Ortiz Borrego 2004). Still, at present these transhumant livestock systems are threatened due to a decline in livestock numbers, especially if farmers are not able to integrate new values and functions to their products (Gómez Sal 2004).

Transhumance in biosphere reserves

Parts of a transhumant system are included in the BR “Las Dehesas de Sierra Morena” in central-southern Spain (border of Andalusia and Castile-La Mancha). The BR encompasses savannah-like winter pastures with grasslands and oaks for sheep farming in Spain. The BR was established in 2002 and covers 424,400 ha. Summer pastures and maintenance of drove roads are not the aims of the BR, so it does not encompass a whole transhumant system.

Transhumant pastoralists are also found in the BR “Nanda Devi” in the Western Himalaya Mountains of India (established in 2004, 640,703 ha). Their entire households migrate with cattle, sheep and goats to lower valleys in winter and to temporary settlements in high mountains in summer. The summer settlements lie within the transition zone of the BR while winter settlements are located outside of the BR (Nautiyal et al. 2003).

Very few BR focus on the maintenance and support of transhumant livestock farming and none aim at managing the whole system of transhumant livestock farming so far. If a BR in Kakheti chooses to put the transhumant livestock farming in the focus, it could become a model region in Europe and the world for maintaining the traditional and sustainable land mobile pastoralism and transhumance.

Transhumance in Georgia

Sheep farming in Georgia is generally organised in transhumant systems. The main summer pastures can be found in Tusheti, Samtskhe-Javakheti and Mtskheta-Mtianeti. The main winter pastures are located in Kakheti and a few in Kvemo Kartli. Some sheep farmers are also located in western Georgia.

The transhumant system is strongly based on Tushuri sheep, which is adapted to travel long distances (Gonashvili et al. 2013). There is no reliable data available concerning the current number of sheep in the country. According to various calculations currently there should be from 600,000 to 1 million heads of sheep (Gonashvili et al. 2013).

Similar tendencies as in other European countries can be found in Georgia. The transhumant livestock farming system is threatened due to various reasons. The main problems are outlined in chapter 2.4.2). In Georgia especially winter pastures are a limiting factor (scarce and overgrazed), drove roads are not well secured and accepted and there is a lack of intermediate pastures.

Also the future perspective of this livestock farming is questioned, as in many other countries. Whether young people are going to maintain the Tush culture and sheep farming is a crucial question in this regard, which some people see critical and doubtful. Nevertheless, the stakeholder consultations and research conducted within this feasibility study revealed that until now sheep farming is still profitable. Especially for Tush people, sheep farming and the related lifestyle it is important in regard to maintenance of identity and culture. It can be concluded that the transhumant livestock farming has a potential in the future, given that the related outlined problems are tackled.

3.2.2. Five dimensions of feasibility

In order to assess the feasibility of a region to become a BR, the region needs to be analysed and evaluated in regard to all functions of BRs (conservation, sustainable development, research and monitoring). According to a guideline used for BR feasibility assessment in Austria (Lange 2008), it is necessary to look closer at the “five dimensions of feasibility”: Natural and cultural landscape, sustainable development, information and participation, research and monitoring, law and financing. In this subchapter the situation in the target region (see chapter 2) is evaluated against these five dimensions.



Figure 25: Five dimensions of feasibility of a BR (adapted from Lange 2008)

Natural and cultural landscape

BRs are supposed to serve the conservation of biodiversity. They can be used as a tool to implement the Convention of Biological Diversity (CBD) of which Georgia became a party in 1994. BRs are also mentioned as important tool in the NBSAP of Georgia and the ECP for the Caucasus (Government of Georgia 2014, Zazanashvili et al. 2013).

Several PAs hosting unique biodiversity are in place in the target region. Georgia has a long history in conservation and thus the PAs are rather well established and accepted. There is potential to improve conservation in the region and a BR could provide a contribution to conservation of biodiversity of global importance (untouched natural landscapes, but also cultural landscapes valuable for biodiversity). The target region also shows representativeness for the Caucasus ecoregion.

There are also several types of PAs in the target area (IUCN categories I, II and V). For the transition zone of a BR, municipality areas will have to be added. Thus a clear gradation of human influence would be visible and it will be possible to establish and distinguish three zones in the BR. Within stakeholder consultations no buffer or transition zone design has been discussed so far.

The cultural potential is very high as there is valuable cultural heritage which could gain further support and protection by a BR: sacred forests, traditional lifestyle of Tush mountain community with distinct village structure and annual life cycle. This includes transhumant sheep farming, local breeds of horse and sheep, traditional handicrafts, ancient human settlements, language Tsova-Tush (listed as endangered language by UNESCO).

Weaknesses of the target region in this field are: an increase of human pressure (overgrazing, forest use, tourism) in combination with insufficient management and lack of enforcement (especially regarding grazing and land tenure), lack of spatial or land use planning and lack of data and monitoring (especially land use and land tenure).

Different options and scenarios for a possible BR have been discussed with the stakeholders. Size and delineation will also have to be discussed and decided with all stakeholders. The size should be sufficient to serve all three functions of a BR, e.g. the transition zone needs to have sufficient size to enable sustainable development projects and include a variety of economic processes and stakeholders.

Transboundary potential in Tusheti region is rather low due to political reasons. From a conservation point of view, it would be highly interesting and useful as ecosystems of Tusheti and bordering areas in Russia are strongly connected. Historically, even areas close to the Caspian Sea in Russia were used for winter pastures. Potential for transboundary cooperation is higher in Vashlovani region (bordering Azerbaijan).

Supporting factors for BR development are:

- Good coherency with UNESCO's priorities and objectives: high biodiversity value, relevance with regard to climate change adaptation, no BR in the three Caucasus countries until now
- Coherency with ECP and NBSAP

Sustainable development

One central element of BRs is their function for sustainable economic development. The new strategy of the MAB Programme of UNESCO stresses the importance of BRs as model regions for exploring, establishing and demonstrating sustainable economic systems as well as for developing approaches to foster the resilience of communities (UNESCO 2015a). BRs shall demonstrate good examples for best practice of natural resource use which maintains the resources for future generations. A region to be nominated as a BR should have good potential for sustainable agriculture and forestry, environmentally friendly tourism, alternative energy sources and innovative projects with regard to regional value chains and mobility.

The new Lima Action Plan which was published early 2016 further stresses the role of BRs as model regions to implement the Sustainable Development Goals and Multilateral Environmental Agreements (MEAs) and also sets BRs as priority sites and observatories for climate change research, monitoring, mitigation and adaptation (UNESCO 2016).

High potential to support sustainable development in the target region lies with sustainable livestock farming and community-based ecotourism (nature tourism in high mountains and semi-deserts/steppes, agrotourism in lowlands). Several initiatives for sustainable regional development and land use exist in the region. They are strongly supported by international organisations such as CDA, UNDP and GIZ (IBiS programme: erosion control in Tusheti, sustainable forestry in Akhmeta, sustainable agriculture in Akhmeta and Dedoplistskaro). Especially the communities in Tusheti are already developing own ideas and initiatives to strengthen the development of their region (local brands, product development, formation of cooperatives etc.). Renewable energies are already used in Tusheti. The access to Tusheti is rather difficult and limited to 3-4 months which is a relevant limiting factor for tourism development.

Vashlovani, in contrast, is accessible throughout the year but less populated, which is disadvantageous for economic development. Sustainable development is especially relevant in the field of grazing and crop-growing here. Tourism is less developed, but can be developed all year. Renewable energies are not used as much.

Local brands and processing of products in the region exist but could be improved. Tourism development and export of products like meat and wool is already practiced and is seen as promising future perspective. However, there is also a list of problems and needs concerning development (see chapters 2.3.5, 2.4.1 and 2.4.2), like lack of planning and monitoring (no land use maps, chaotic land tenure situation), or out-migration of young and higher educated people.

Inter-sectorial cooperation is not yet well developed and represents a challenge. Cooperation of municipalities strongly depends on personal relations and is not well established so far.

Awareness and understanding of the BR concept on national and regional level is still limited. More awareness rising for the advantages of the BR concept and involvement of stakeholders is still needed. Especially on the national level this can be supported by more engagement of the leading agency or group of the Georgian government side.

Information and participation

Until a BR can be nominated by UNESCO, intensive consensus-building needs to take place. People in the target region have to be informed and closely involved into planning and decision-making for the possible BR. Active participation of the population is an important success factor for BR development. Already existing participation mechanisms, networks and information structures are relevant for the assessment of the feasibility.

There is no BR in Georgia or neighbouring Caucasus countries yet. The initiative represents a totally new situation as it cannot build on experiences or references regarding BRs in the Caucasus region.

In the target region there are various community-based organisations and NGOs through which people can be reached and that are considered important stakeholders (also see annex 4). One example is the organisation “association of friends” of PAs that are consulted for advice and opinion on several issues concerning PA management in Tusheti as well as Vashlovani.

In general, community participation has not received sufficient attention in development interventions up to now. It is still a new approach in a country with a long history of centralistic governance. For a successful BR initiative, a more profound understanding of participatory processes should be promoted and especially civic participation in local self-governance strengthened. Initiatives such as the Local Governance Programme South Caucasus of the GIZ (Local self-government and good local governance in the South Caucasus including participatory management) or the Regional and Municipal Infrastructure Development in Georgia (project by Swiss Cooperation Office with World Bank and Municipal Development Fund) are working to support this.

The process of thinking towards a more regional and integrated approach to sustainable development in Kakheti started in December 2013. A MARISCO workshop with various stakeholders revealed that a landscape approach on a regional level is needed to improve management of natural resources and sustainable development in Kakheti, where the option of a BR was supported (Ibisch et al 2015).

Within the feasibility study several consultations and meetings with stakeholders were conducted (with municipality administrations, PA administrations, governor of Kakheti and group workshops with NGOs and interest groups) (see Annex 4):

- February 2016: to present UNESCO concept, project idea and aims, to discuss concept, strengths and weaknesses of the region and next steps
- Reading and commenting of feasibility study draft results
- July: consultations on draft results, discussion concerning next steps and vision for possible BR

The overall feedback from these stakeholders in the region was positive. There was a general interest and willingness to be involved further by all stakeholders that were consulted.

Further needs:

- Development of a joint vision with all stakeholders
- Development and strengthening of regional networks, e.g. shepherd networks

- Awareness rising for UNESCO concept of BRs (on the national level as well as on the regional level in Kakheti)
- Formation and support of a constant and dedicated local group for the development of the possible BR
- Use of existing and further development of mechanisms for participation of stakeholders within the possible BR

Research and monitoring

A feasibility study has to assess how suitable a region is to serve as research site for human-environment-relationships and which research activities are already taking place in a coordinated way. In the target region this dimension of feasibility is characterised in the following way:

- Most research activities within PAs and by internationally funded projects (national and international experts), universities also get involved
- Focus on climate change vulnerability, degradation and sustainable resource management, human-wildlife conflict
- International expertise is involved via international experts in projects, but there is also cooperation with international universities
- Research and involvement of students could be increased, field station of ISU in Dedoplistskaro could be used more
- There is no central documentation of the research results
- Monitoring is done in PAs (wildlife and land use), especially outside of PAs there is lack of central monitoring of land and resource use (land tenure, livestock numbers, tourism etc.)

Law and financing

As BRs are nominated by UNESCO, the respective region receives an international title and international recognition. Some countries have anchored this title in their national legislation, others have not (see chapter 3.1.3). However, in the new Lima Action Plan the integration of BRs into relevant legislation, policies and/or programmes are named as an important action in order to support the functioning of BR (UNESCO 2016). The financial sustainability of a BR is also crucial for its functioning (Aim A5 in LAP) (UNESCO 2016). Realistic planning of the development of a BR includes planning of finances to build up management structures etc.

The establishment of BRs is possible according to the Georgian “Law on the System of Protected Areas” (see Annex 5), but there are some amendments needed in order to fully correspond to the UNESCO concept. Details and recommendations for improvements are outlined in chapter 2.6. Nevertheless, this aspect represents not the most urgent issue to address. Please see 3.1.3 for UNESCO requirements.

The PAs in the study region can serve as core zones of the possible BR (core zones of national parks and strict reserves). They have been established for many years and are legally secured. A management is in place.

With regard to finances, it is positive that international donors are already supporting the region in regional sustainable development (especially GIZ wants to support regional sustainable development)

Further needs:

- Management structure/design of the future BR administrative body (not discussed so far, will be important in the next steps)
 - Can be based on existing management units and plans (e.g. PAs), for which a good coordination mechanism needs to be found that needs good preparation and careful elaboration. Based on the knowledge presented in chapter 3.1.4, various solutions for Kakheti are possible and should be further discussed.
 - Once there is a structure, relevant competencies for implementing the BR need to be developed within the future administrative body of the BR in Kakheti (mainly communicative, maybe also technical and administrative, depending on management structure)
 - Management should be problem-oriented, there should be networking and leadership, that is most important
 - Continuous work of local initiative as well as continuous political support on a broad cross-sectorial level
- Allocation of funds for flagship and pioneering project initiatives
- Sufficient finances and resources at the local level (for municipalities, community initiatives etc.), also for long-term funding of BR

3.2.3. Chances and constraints for the study region by establishment of a BR

BRs are an instrument for sustainable development of a region. A BR can act as an umbrella for the development and facilitation of this regional development process, which will result in greater awareness, identification, branding and international and national reputation. It may also create an appropriate framework for improving capacities in order to implement more projects in the region financed by international donors. Social and economic constraints can be tackled and central problems like structural underdevelopment could be addressed in an integrated manner with various win-win situations possible. The identification of the people with the region as a BR is crucial for the success and functioning of it. The possible BR bears the unique selling points as it will be the first BR in Georgia as well as in the three South-Caucasus countries.

Chances for the region

Connecting the needs of the people to nature conservation and development goals by sustainable development is a clear strength of the BR concept. A BR can find answers and develop guidelines for various serious challenges, especially as the UNESCO concept is quite flexible and leaves

room to adjust to the region's needs. This can be done by moderation and mitigation of land use conflicts, joint development of land use agreements and guidelines with land users and other stakeholders or support in developing projects and initiatives to test and show best practice approaches in natural resource use. There is a strong need for sustainable development and regional planning in Kakheti for which a BR can be used as a framework and tool. It can foster cross-sectorial cooperation on all levels and improve cooperation of municipalities which is lacking joint strategies and unified structures up to now. The BR offers a great framework to put into practice the strategies identified in the stakeholder workshop in February 2016 (see Annex 7). Considering the high conservation value of the region, the existing PAs, traditional land use schemes and the small scale primary sector, Kakheti in its complexity is very suitable for the implementation of the BR concept.

- Sustainable economic development
 - BR framework as an umbrella to coordinate and bunch initiatives in this field, thus increase of effectiveness and success in regard to natural resource management and sustainable development, e.g. by coordination of activities of interest groups and supervising and advising services for land user groups
 - BR can be a vehicle for economic development
 - BR framework and branding can attract investment and support from national and international, private and public donor organisations, e.g. to improve marketing of sheep products
 - Incentive for detailed development projects and programmes (e.g. GIZ initiative in Kakheti), e.g. for infrastructure and product development, including trainings

- Conservation and environment
 - BR framework as an umbrella to coordinate the different PAs and their management activities; increase of cooperation of different PAs, thus more effectiveness in conservation
 - Support of conservation in core and buffer zone by strengthening of existing PAs
 - Strong impulse for nature and environmental protection activities also outside the existing PAs
 - Incentive for concrete initiatives for improving the environmental situation
 - Increase of awareness rising and environmental education for nature conservation and environmental protection
 - Integrative approach harmonising utilisation and conservation

- Society and social development
 - Support of civil society development by strengthening participatory processes
 - Increase of awareness and involvement of local population and communities
 - Support of regional identification of people
 - Increase of attractiveness of the region
 - Improvement of agriculture and processing industry, e.g. for sheep products
 - Improvement of infrastructure and service industry, education, science
 - Development of sustainable tourism
 - Creation of regional jobs by establishment of BR management

Constraints and challenges for the region

A BR can be seen as an optional motor for the region to bring together and coordinate approaches, initiatives and stakeholders. The BR creates a label and a common identity for the development of a region. Serious constraints for the region resulting from the establishment of a BR should not be expected, at least not within the framework of sustainable development. There are no specific prescriptions from UNESCO with regard to constraints or limitations as a BR is about promoting sustainable alternatives in resource use and creating opportunities, not about more prohibitions. The core and buffer zones encompass already existing PAs which have clear and useful regulations in order to conserve nature more strictly. As these PAs have been in place already for a long time, the BR will bring no additional constraints.

Still it should be clearly understood that BRs are model region for sustainable development (see chapter 3.1.1 for more details). This should be a general guiding principle of operation on the territory of a BR which makes it different from surrounding areas. Human interventions and the economic activities should follow this principle. It is up to the state and region to define, promote and guide towards such a development and also to decide on related regulations. In an evaluation of a designated BR (usually 10 years after designation), the state has to prove to UNESCO how sustainable development has been fostered and promoted in the BR.

According to this guiding principle certain activities and development such as the establishment, construction and operation of unsustainable infrastructure and industry as well as an overuse of natural resources should not take place in a BR.

The BR concept is an innovative approach for Georgia, especially because it is based on participatory management and requires more self-governance and cooperation on the municipality level. Several challenges arise from this but BR establishment leaves room for process and development and some of the necessary structures can evolve with time. However, they must be taken into account regarding a successful management and realistic planning of time and resources.

Such challenges are:

- Establishment of a suitable and effective BR management as an innovative approach
 - on a regional scale
 - based on principles of participation
- Allocation of funds and qualified personnel on the regional or municipality level to continuously secure successful and effective management of BR
- Establishment of supportive cross-sectorial cooperation in order to tackle issues of sustainable development as cross-cutting issue (on national and regional level)
- Establishment of incentives to offer clear benefits for land users to apply approaches towards sustainable development (critical socio-economic situation of many people)
- Regional development within a BR focuses on sustainability which is suitable for Kakheti but a serious challenge facing parallel general development in Georgia (development of mass tourism, hydropower stations, infrastructure, privatisation of state land etc.)

3.2.4. Benchmark and feasibility assessment

The principle benchmark for the assessment of the feasibility of a potential BR is set by the criteria, objectives and definitions stated in the Statutory Framework of the WNBR and the recommendations for the development of BRs in the Seville Strategy (UNESCO 1996). Consequently the following question becomes crucial (Loiskandl et al. 2009):

Does the present situation of the target region meet the criteria or is there a realistic chance to meet them in the future by initiatives and activities (near future or long-term)?

The following table provides an overview to answer this question and thus assess the feasibility of the target area to become a BR. It assesses the situation in the region against the list of criteria of the Statutory Framework and the objectives formulated in the Seville Strategy. It assesses whether and when the different criteria can be met. If criteria are not fulfilled yet, they might either be fulfilled in a rather short period of 1-3 years or in the long term development. The subject of the feasibility matrix is the entire target region which has been analysed in this document so far (Tusheti and Vashlovani regions and a possible connecting corridor).

The Seville Strategy provides many recommendations for developing effective BRs on the international, national and individual level and a corresponding list of implementation indicators. The BR nomination form has also been used for the feasibility matrix as it provides a lot of useful information for the nomination at a later stage. Some criteria are factual ones referring to the current situation of nature and the socio-economic situation. Other criteria require efforts in planning and developing the BR, also in the long-term. The criteria list provided in the Statutory Framework is only a minimum set of criteria. Some criteria can be met later in the development process. The state has to assure that the criteria will be met in the future. If a BR is designated, the state has to provide periodic reviews every 10 years which are required by UNESCO. It has to be outlined how the BR maintains its functionality and how it improved its model character which includes that it needs to meet all criteria at some point. If not, the status of a BR can be withdrawn and the site removed from the WNBR.

Feasibility matrix

Table 13: Feasibility matrix for a potential BR in the large target region in Kakheti (adapted after Loiskandl et al. 2009)

(Green marked criteria are already fulfilled; yellow marked can and red marked cannot be fulfilled. The last column summarises the feasibility of each criterion. Three pluses = mean criterion is fulfilled, two pluses = it will be relatively easy to fulfil it, one plus = it will be challenging to fulfil it, no plus = it will be impossible to fulfil it.)

| UNESCO criteria, requirements and recommendations for BRs ¹⁰ | Already fulfilled | Possible to fulfil | | | Not possible to fulfil | Final assessment |
|--|----------------------------------|--------------------|-----------------------|---|------------------------|------------------|
| | | Near future | Long-term development | Requirements and comments | | |
| General on the selection of the area: BRs are areas ... | | | | | | |
| .. of ecosystems encompassing a mosaic of ecosystems representative of major biogeographic regions, including a gradation of human interventions | | | | The present situation in the target region meets this criterion. | | + + + |
| ... of significance for biological diversity conservation | | | | The present situation in the target region meets this criterion. | | + + + |
| ... providing an opportunity to explore and demonstrate approaches to sustainable development on a regional scale | Partly in place, e.g. in Tusheti | | | There are positive preconditions but the regional scale needs the suitable management framework that has to be set up. The initiatives can be set up within follow-up activities and an implementation phase prior to the nomination. | | + |

¹⁰ Based on UNESCO Statutory Framework, Seville Strategy, Madrid Action Plan, Nomination Form

| | | | | | | |
|--|----------------------------------|--|--|--|--|-------|
| ... striving to be sites of excellence to explore and demonstrate approaches to conservation and sustainable development on a regional scale | Partly in place, e.g. in Tusheti | | | There are positive preconditions but the regional scale needs the suitable management framework that has to be set up. The initiatives can be set up within follow-up activities and an implementation phase prior to the nomination. | | + |
| Appropriate size to serve the functions of a BR: | | | | | | |
| 1) contribute to conservation of landscapes, ecosystems, species and genetic variation | | | | The present situation in the target region partly already meets this criterion due to the existence of PAs. Will have to be monitored. | | + + + |
| 2) foster economic and human development which is socio-culturally and ecologically sustainable | Partly in place, e.g. in Tusheti | | | Size and exact area of the possible BR is not discussed yet, so design of transition zone is open. Will have to be discussed and fixed in planning documents. Two municipalities and governor's office expressed general interest and support. Thus it is expected that criterion can be met in the long-term. | | + |
| 3) support for demonstration projects, environmental education and training, research and monitoring | | | | Size and exact area of the possible BR is not discussed yet. Will have to be discussed and fixed in planning documents. Two municipalities and governor's office expressed general interest and support. Thus it is expected that criterion can be met in the long-term. | | + |
| Appropriate zonation to include these functions: | | | | | | |

| | | | | | | |
|--|--|--|--|---|--|-------|
| 1) a legally constituted core area or areas devoted to long-term protection, according to the conservation objectives of the BR, and of sufficient size to meet these objectives | | | | Both PA complexes of Tusheti and Vashlovani can partly serve as core zones, are legally designated and have management plans. Integration of this plan into overall management concept of BR has to be elaborated. The present situation in the target area meets this criterion. | | + + + |
| 2) a buffer zone or zones clearly identified and surrounding or contiguous to the core area or areas, where only activities compatible with the conservation objectives can take place | | | | Participatory zonation planning is required. Protected Landscape and eventually parts of NP can become buffer zone. | | + + |
| 3) an outer transition area where sustainable resource management practices are promoted and developed | | | | Participatory zonation planning is required. Large BR including a corridor will need long-term negotiations and consensus-building. | | + |
| Management and participation: BRs provide... | | | | | | |
| ...organizational arrangements and measures for the involvement and participation of suitable range of inter alia public authorities, local communities and private interests | | | | Needs to be agreed after it has been clarified which municipalities will be included. | | + + |
| ... programmes for research, monitoring, education and training | | | | Implementation project and funding required. | | + + |

| | | | | | | |
|--|--|--|--|---|--|-----|
| ... mechanisms to manage human use and activities in buffer zones | | | | PL in Tusheti could serve as buffer zone (legally anchored, management plan in place), additional buffer zone needs to be delineated. | | + + |
| ... a management policy or plan for the area as a BR | | | | Good mechanism for management needs to be elaborated as BR will create an umbrella on existing management authorities (municipalities, PAs). For a large BR including corridor this requires intensive consensus-building and negotiations. | | + |
| ... a designated authority or mechanism to implement this policy or plan | | | | Good mechanism for management needs to be elaborated as BR will create an umbrella on existing management authorities (municipalities, PAs). For a large BR including corridor this requires intensive consensus-building and negotiations. | | + |
| BRs which are internationally recognized... | | | | | | |
| ... form the World Network of BRs in which they actively cooperate and participate | | | | Will be done after nomination of BR. Functional national MAB committee is crucial here. | | + |
| ... are contributing to the Convention on Biological Diversity | | | | Effects will be visible on a long-term perspective, after nomination. | | + |

| Role of the State: BRs... | | | | | | |
|---|--|--|--|---|--|-----|
| ... remain under the sovereign jurisdiction of the State where they are situated; according to the UNESCO criteria states take the measures which they deem necessary according to their national legislation | | | | Legal framework needs to be amended. Analysis and recommendations are already drafted. Was identified as priority action when starting the initiative. | | + |
| ... are provided with active contributions and support by the state | | | | Needed in near future. Commitments should be clarified and agreed on a cross-sectorial basis. | | + + |
| ... are given continuing promotion by the state | | | | Visible on the long-term perspective. Conception should be drafted and agreed in the near future. | | + |
| ... are endorsed by national, regional and local authorities and find acceptance with the local population | | | | Needs to start in near future (pioneer initiatives and supporters), BR should be based on acceptance. Will need much awareness rising and communication work. Effects will be visible on a long-term perspective. | | + |

3.3. Conclusion

3.3.1. Final assessment

For the entire target region which has been analysed in this document so far (Tusheti and Vashlovani regions and corridor) and which has been subject to the feasibility matrix above, it can be said:

- Some criteria are already fulfilled.
- Other criteria can be fulfilled in the near future or in the long-term perspective. The time frame depends on the size of the area and the number of stakeholders involved. The larger the BR area, the more stakeholder are involved and the more consensus-building and networking in order to agree on management and objectives as well as setting up cooperation mechanisms etc. is needed.
- No criterion seems impossible to fulfil (with time).

Given that no criterion seems impossible to fulfil, the feasibility for a BR in the region is given. All UNESCO requirements can be met if there is a local initiative with willingness to cooperate and work towards establishing a model region for sustainable development according to the UNESCO concept and which is backed by strong political support. Local stakeholders are highly interested in the idea and to be involved, but at this stage a local initiative and group of champions to promote the idea and push the development is still missing and should be formed. The BR development will depend strongly on that.

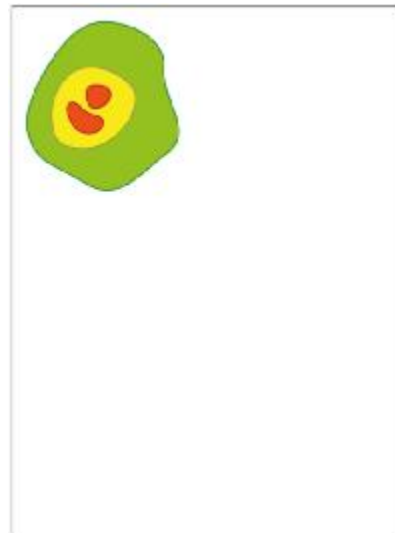
How fast and successful the BR can be implemented depends much on the concrete size, zonation and timing of development. Different scenarios should be discussed in the following. To start with a smaller BR scenario for BR development does not mean the rejection of another bigger scenario, which can remain a long-term goal. Such a bigger scenario can be developed with growing degree of inter-sectorial cooperation and civic participation, with evolving capacities to facilitate multi-stakeholder processes and self-organisation and to manage more complex networks/platforms, with evolvement of cooperation mechanisms, suitable institutional arrangements and thus problem-solving capacity.

3.3.2. Scenarios for a BR in Kakheti

Scenario 1: Minimal

Characteristics:

Only a part of the target area is considered for BR development, e.g. Tusheti PAs and adjacent areas in the lowlands of Akhmeta and possibly Telavi municipality (to be identified and decided with communities)



Pro's:

- Less municipalities and stakeholders involved
- Less negotiation and conflict resolution needed, thus management will be easier
- Easier to achieve and to create a success story
- Less time needed until nomination will be possible
- Can form a good start and ground for future enlargement of the BR
- Unification and improved cooperation of existing management units can be enabled (TPA, TPL and other municipality lands)

Con's:

- Less outreach of sustainable regional development
- Only small area and few communities of transhumant sheep farming system are covered (many relevant stakeholders and pastures are outside of BR)
- Some areas of BR are inaccessible for 8-9 months of the year

Recommendation:

- Enlarge BR at a later stage in order to include Dedoplistskaro and the corridor area, still tackle transhumant sheep farming as a main issue from the beginning
- Still corridor area and winter pastures should be included as areas of interest (even if it is located outside of the actual territory of the BR), cooperation initiatives fostered within the BR can extend beyond the boundaries of the BR for sharing best practices, solutions and approaches with the wider region

Options/Variations:

- TPA and TPL as core and buffer zones, transition zone reaching into Akhmeta and Telavi municipality (at least Lower and Upper Alvani and Laliskuri communities), this is up to discussion and willingness of communities (open process with many options)
- For this smaller concept, transboundary BR with Russia could also be envisaged in the future. However, this would distract from the theme of transhumance.

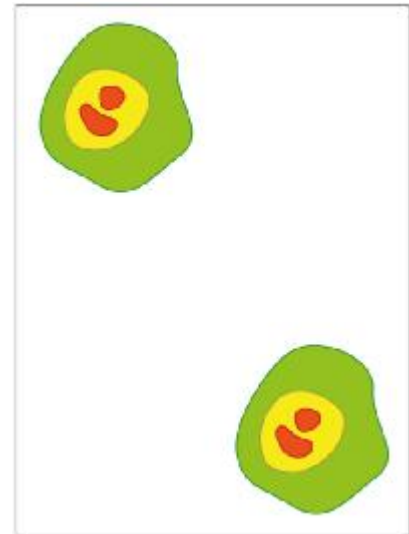
Scenario 2: Cluster

Characteristics:

Only a part of the target area is considered for BR development, but both PA complexes and adjacent municipality areas for the transition zone would be integrated, corridor would not be covered territorially

Pro's:

- Both PA complexes and adjacent municipality lands would be managed more jointly
- BR as incentive for increased cooperation of municipalities, this could create a positive example in the region More relevant stakeholders and areas of transhumant sheep farming system would be included



Con's:

- Areas are not connected and quite distant, challenging to link and coordinate management
- Quite unusual approach for a BR, needs very good reasoning/justification towards UNESCO

Recommendation:

- Thoughtful elaboration of an efficient management structure that can connect both clusters well
- Include connecting corridor at a later stage as a transition zone of the BR
- Still corridor area and winter pastures should be included as areas of interest (even if it is located outside of the actual territory of the BR), cooperation initiatives fostered within the BR can extend beyond the boundaries of the BR for sharing practices, solutions and approaches with the wider region

Options/Variations:

- Stepping stones could be included between the clusters in this scenario, e.g. smaller areas identified as grazing grounds on the way between winter and summer pasture areas
- TPA, TPL, VPA could serve as core and buffer zones, additional buffer zones to be identified, transition zone possibly in Dedoplistskaro, Akhmeta and Telavi municipality
- It would still be possible in this cluster scenario to work on the development of the corridor as a task of the BR, including of registered migration route could be considered

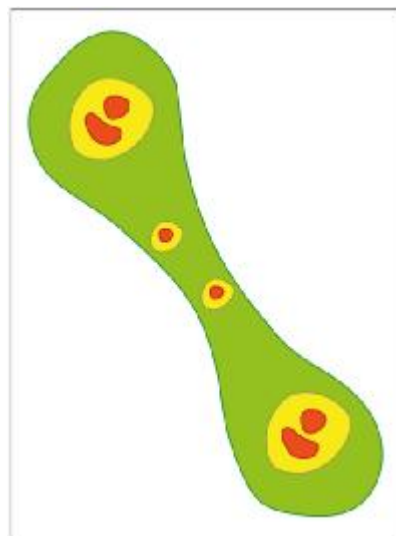
Scenario 3: Big

Characteristics:

Both PA complexes, adjacent municipality areas and a corridor would be included stretching from one end of Kakheti to the other.

Pro's:

- Both PA complexes could be managed more jointly
- The corridor problems and development challenges could be tackled more directly as it would be included territorially
- The majority of the sheep farming system from Tusheti would be covered by the BR area

**Con's:**

- Huge area, high population number within the BR (since the lowlands between the two cores is densely populated), thus stakeholder involvement very complex and challenging
- Successful management needs a long preparation process
- BR development will take a long time, long way to prepare for UNESCO nomination application (requires consensus and joint planning with at least 5 municipalities, many land use conflicts), risk: process might get stuck and people might get frustrated, success story is endangered

Options:

- Improve conservation activities in the corridor area, e.g. Alazani floodplain forest

Recommendation:

- Secure long-term projects and funding, strong high level political support and solid partner structure for development of this scenario.
- Consultation of stakeholders in municipalities included in the corridor area (their feedback and position is still unknown)

The BR should not be seen as a static place, it can also evolve with time. In this sense, the scenarios shown above can be seen either as different versions to set up the BR, or as consecutive steps in the development of the BR. To start small does not mean the rejection of a bigger scenario. Scenario 3 could be a long-term goal. After some time it will be possible to manage more complex networks/platforms with evolvement of cooperation mechanisms and suitable institutional arrangements. Thus also problem-solving capacities will increase. The decision for the scenario to pursue first should be taken with all stakeholders discussing all advantages and disadvantages and checking for necessary prerequisites.

IV. Recommendations and next steps

4.1. General recommendations

On the national level

- A strong political will and high level support is needed for the next steps,. The backing by state authorities will be an indispensable precondition, not only because the state needs to request for international recognition of an area as a BR.
 - As individual BRs remain under the sovereign jurisdiction of the state where they are situated, states keep on being free to design and decide measures which they deem necessary for the promotion of a balanced relationship between Man and the Biosphere. For considering an area qualified for designation as a BR it takes the political will of the state concerned to run, facilitate and actively contribute to a BR preparation and implementation process and to long term efforts to promote the three complementary functions of BRs.
 - It is hence crucial in the process of planning and implementing a BR to have strong leadership by an agency or a group of agencies on the national level. Without (a) suitable leader institution(s) with all necessary capacities, the process will not be successful, especially considering that participatory governance is not omnipresent in Georgia's political culture.
- With regard to the BR development it is necessary to establish a close communication link between the Georgian government and the MAB Programme at UNESCO via the National Commission of UNESCO in Georgia. This will help to prepare any BR nomination and to get support and advice. This should include the setting up of a functional National MAB Committee.
- Legal amendments shall be based on consultation with stakeholders and beneficiaries.
- Public awareness is a crucial issue, people need to understand the idea and added value of a BR
 - The UNESCO's recent publication "*Lessons from Biosphere Reserves in the Asia-Pacific Region, and a Way Forward - a regional review of biosphere reserves*" highlights the lack of understanding of the concept across boundaries as one of the main challenges for its successful implementation (UNESCO office Jakarta, Regional Science Bureau for Asia and the Pacific 2010). This fundamental challenge of the concept translates into difficulties in communicating its goal and value to stakeholders at national and local levels. Therefore, it is recommendable that the initiative of BR establishment will have a well elaborated public awareness plan that will deliver information to all stakeholders about the BR, its difference to typical protected areas, and moreover, its added value for local communities.

- Cross-sectorial cooperation should be improved for next steps, based on more structure and drive within the country (from government side also)
- A steering committee to lead the process of BR development and to coordinate different initiatives, projects and programmes with regard to sustainable regional development in the target area should be established (government representatives, NGOs as well as local representatives should be included)
- Ministries such as the Ministry of Economy and Sustainable Development, the Ministry of Regional Development and Infrastructure and the Ministry of Agriculture as important partners in the government sector

On the regional level:

- It can be recommended to start with a smaller scenario at first (like scenario 1 or 2 in chapter 3.3.2) to reduce the challenges and create a promising and convincing example of a functional BR and later extend towards the bigger scenario with evolving degree of inter-sectorial cooperation, civic participation, capacities to facilitate multi-stakeholder processes and self-organisation.
- BRs are “learning sites”. The BR development can be seen as an experiment and a testing site for sustainable regional development. It is a pioneer site in Georgia and should be dealt with as such. It is not recommended to linger from the very beginning with institutional and governance issues that are not crucial at this stage (see also 3.1.4).
- The basis of a BR is a local initiative. Find a group of champions and motivated protagonists from the region to push the idea in the region (with high personal commitment, assertiveness and willingness to take risks)
 - Thus setting up a body of a manageable size comprised of interested parties and stakeholders who will be in charge of implementing initial activities and kick-start measures is recommended. This group may eventually comprise the management unit in the future.
 - Awareness campaigns and other promotion activities should be led by this group.
 - Strengthen competencies and skills of the members of this group.
 - Additional network of supporters, forming alliances and ensuring certain continuity of involved personnel and supporters (individuals as advocates)
- Work problem-based: success factors for participatory BR development are a broad awareness for problems and a noticeable pressure by problems and challenges in regard to sustainable resource use and regional development in the target group (collected and prioritised problems in this study can be used as a base). The BR should find specific solutions for specific problems. At the same time management should have a problem-solving approach respecting the subjective perceptions of stakeholders.
- Coalition and cooperation: Strive for win-win-situations to promote cooperation and motivate for participation and involvement.

- Identify concrete financial support for implementation, also as (tangible) incentive for people to get engaged (as concrete as possible)
 - In order to raise awareness and increase acceptance of stakeholders it is important to realise, show and communicate successful and convincing examples early.
 - Keep in mind that the BR itself provides mainly a framework for projects and initiatives for sustainable development.
- Donor support is crucial (though long-term financing needs to be allocated to secure the endurance of BR), maybe as small grants under the general BR establishment planning umbrella, for example small findings of eco-tourism support, sustainable sheep farming measures, etc. This will promote the idea of a BR and in the process and prepare the ground for future smoother establishment.
- The management structure needs to be well elaborated based on existing management structures. The management needs to be supported by the existing authorities (elaborate collaboration mechanism)
 - Time needed for elaboration of best management structure in Georgian context (examine other BRs, best practice evaluation)
 - Elaboration needed how much technical, financial capacities are needed
 - Increase of competencies to work process-oriented (with regard to management skills, strategy development and knowledge management)
 - Build a coordination system within concrete organs that will be involved in BR management
- More data and research is needed (land use, especially livestock farming). Closer cooperation with academic and research institutions would be favourable here.
- Involvement of communities and participation is crucial in the whole process and any step of developing a BR
- Use of the name “reserve” should be reconsidered as it brings up associations with strict nature conservation. The development of an alternative term such as “biosphere region” is recommendable.

4.2. Next steps

... [Will be discussed with stakeholders on national and regional level in July and formulated here afterwards!]

4.2.1. Proposal for a road map

Objectives

...

Activities

...

Timeframe

...

Chances and Risks

...

Synergies with other initiatives and projects

...

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Annexes

Annex 1: Additional requirements and potentials for biodiversity and environmental conservation in Georgia

The following brief analysis is an excerpt of the National Biodiversity Strategy and Action Plan of Georgia (NBSAP) 2014-2020 (Ministry of Environment and Natural Resource Protection Georgia 2014b) for the general situation in Georgia. In 2005, NACRES, co-author of this feasibility study report, led the process of development of the first NBSAP. Subsequently, the organisation has been part of the working group tasked to revise the first plan and elaborate the current one.

Key Biodiversity Areas and Habitats of Georgia

There are numerous key biodiversity areas (KBA) outside the current protected areas system of Georgia. These include biological corridors, animal migration corridors, important plant areas (IPA), important bird areas (IBA), etc. Currently, KBAs need to be identified and mapped and their potential must be assessed to plan suitable protection/restoration measures where needed and to put them under sustainable management.

In terms of habitats, twenty-seven priority ones have been selected using such criteria as current threats and the vulnerability. However, information on the current status of these and other potentially important habitats is extremely scarce.

56 Priority Conservation Areas (PCAs) have been delineated for the Ecoregion Conservation Plan for the Caucasus (ECP) in order to focus on the most important areas for biodiversity conservation (Zazanashvili et al. 2013). Parts of the study region of this feasibility study also lie within PCAs identified by the ECP. The PAs of Tusheti are fully covered by PCA 15 (Khevi-Tusheti), also parts of Vashlovani PAs and some surrounding grazed steppe areas are included in PCA 28 (Kura-Jandari). PCA 23 (Alazani-Ganykh) covers parts of the Alazani floodplain.

PCAs indicate important areas where urgent conservation measures are required. Such measures may include zoning for different forms of land-use (agriculture, industry, infrastructure development and biodiversity conservation), planning of PAs, identification of wildlife corridors, delineating areas for natural resource use, and actions to improve the framework conditions for biodiversity conservation for example institutional strengthening, law enforcement, and awareness building.

Species and habitats

Main problems:

Due to a lack of control of the introduction of alien species into Georgia (both intentional and random) many invasive alien species are now found throughout the country. In some cases, the impact has been devastating (e.g. crucian carp (*Carassius carassius*) in freshwater lakes).

Human-wildlife conflicts in light of increasing pressure on land and resources and the deteriorated ecological balance in the natural ecosystems, wild animals more often come into conflict with local people negatively impacting both the local people and biodiversity. The root causes of such conflicts often lie in the destruction of habitats and wild prey bases and the lack of household waste management, i.e. random landfills near settlements. Despite some surveys, human-wildlife conflicts in Georgia are not thoroughly understood.

Ineffective management of hunting has resulted in a decline of many game species while some have completely disappeared. Wild ungulates have suffered from illegal hunting particularly severely.

The Georgian national Red List created in 2006 assigned species conservation statuses only on the basis of outdated information and/or expert assessment—no national censuses or monitoring had been done since the breakup of the Soviet Union. The Georgian Red List currently requires updating.

Needs:

- The national Red List needs updating.
- Georgian laws need to be gradually harmonized with the EU directives.
- Further develop the unified monitoring system.
- Habitats classification according to internationally recognized systems.
- A national sustainable hunting strategy needs to be developed.
- Management plans need to be elaborated for game species.
- Valuation of rare and economically important species (game species, species of commercial and personal use) is required to ensure effective control of poaching and sustainable use of biological resources.
- More effective response schemes need to be developed and implemented to solve or mitigate human-wildlife conflicts in Georgia.
- A strategy needs to be elaborated with regard to the alien species, already established in Georgia. Despite the legislation, risk of new invasions of alien species still remains. Reliable preventive measures (regulations, control of trade and better customs control, etc.) are needed to avoid the spread of new invasive alien species and subspecies into the country.
- It is important to increase the national capacity to facilitate timely and adequate response to biodiversity problems at all levels.
- Create an effective and fully operational biodiversity clearing house mechanism.

Protected areas

Main problems:

In spite of the expansion of the coverage of PAs, the territorial distribution and the degree of coverage of important conservation areas is not sufficient for ensuring the long-term conservation of the country's biodiversity. The 28 Georgian PAs do not constitute a network - there is no connected system of PAs integrated into the broader landscape/seascape. There is no PAs spatial development plan that would contribute to the expansion of PAs coverage and improve the degree of connectivity.

Presently, there is some cooperation between the main relevant sectors, but in general PAs are not among the highest priorities. Internationally recognised instruments such as a UNESCO World Heritage site, Ramsar site, BR, are insufficiently applied or non-existent in Georgia. As especially interesting for the study at hand, the establishment of BRs is mentioned as important targets within the ECP (A6.1 medium-term target until 2020) as well as the National Biodiversity Strategy and Action Plan of Georgia (Objective C.4.3.3. until 2020) (Zazanashvili et al. 2013; Government of Georgia, Ministry of Environment and Natural Resources Protection 2014).

The legislation on PAs needs further improvement to include more details for the improvement of PA management; a full set of sub-laws and regulations need to be elaborated and adopted in accordance with IUCN's PA categories and new guidelines that have been developed based on new information and experience. Currently, the management of PAs of national categories V and VI is not fully regulated by the legislation.

The lack of financing is often cited as one of the underlying problems with the PAs system.

Needs:

- A PAs spatial development plan and a strong PAs network needs to be established with a well-connected system of PAs integrated into the wider landscape/seascape in order to conserve the country's biodiversity.
- It is important to establish transboundary connectivity with the PA systems of neighboring countries.
- The existing law on PAs should be improved and refined to include more details and to create new opportunities, such as: possibilities of the establishment of new PAs.
- Issues related to the establishment and management of PAs of Category V and VI should be defined more clearly in the legislation.
- The legislation should clearly define the establishment and management of buffer/support zones.
- A legal basis needs to be created (including amendments to all related laws and adoption of relevant sub-laws) that would give APA the authority to act in the areas adjacent to PAs in order to avoid or mitigate any direct or indirect adverse impacts of land use and development processes outside the PAs.
- Management plans for sustainable resource use in the traditional use zones of PAs need to be developed. Management programs for invasive species should be developed. Adequate monitoring and research systems together with a unified database should be established.
- Management effectiveness assessments should be carried out regularly.
- Public awareness at various levels, including all stakeholders groups, needs to be increased.
- Full participation of stakeholders, especially local communities, in PAs management planning needs to be ensured through adoption of effective mechanisms and regulations.
- There is a need to develop adequate compensation mechanisms and promote positive incentives among the local people in support zones of PAs.
- Necessary infrastructure and equipment should be made available and adequately maintained in all PAs.

- The attraction of qualified personnel and the professional growth of staff members should be ensured in all PAs.
- Funding for PAs should be increased, including through the introduction of innovative funding mechanisms and improved fundraising.

Forest ecosystems:

Main problems:

Currently, the main problems in the forestry sector include unsustainable (and often illegal) forest use, excessive grazing, forest fires, pests and diseases, improper hunting and climate change. Poorly planned infrastructure development also poses a serious threat to Georgia's forest ecosystems.

Needs:

- To address the problem of poverty (especially in rural areas) and supply affordable alternative energy sources to the population. However, these problems cannot be addressed by the forestry sector alone.
- An effective wood tracking system should be developed and implemented
- Sustainable forestry standards need to be established in order to promote voluntary certification of forests.
- The establishment of fast-growing forest plantations in open areas (as opposed to naturally forested areas) would contribute to meeting the demand in timber.
- In the next few years, net forest clearance should be brought to zero, while the levels of degradation of forest habitats should be substantially reduced.
- The issue of excessive livestock grazing in forests requires consistent and coordinated efforts at the national level.
- A national-level action plan for combating forest fires should be elaborated and implemented.
- Detailed studies are needed in the forested areas most affected by pests and diseases in order to assess the degree and scale of the problem. Following these, a relevant action plan should be elaborated and implemented.
- Surveys need to be conducted in high-risk areas to assess any potential threats from or actual occurrence of invasive species and their pathways. If necessary, relevant measures to control invasive species and mitigate their negative impacts should be conducted.
- Sustainable forestry would also contribute to mitigation of climate change and adaptation to its negative impacts. Specifically, forest ecosystem resilience to climate change should be enhanced
- Inventories and assessments should be conducted in the forested areas where the forest cover has been modified, degraded or completely depleted.
- Sustainable and multipurpose management, including the conservation of biodiversity, requires the implementation of a flexible and optimal forest categorization system.

- Capacity building of all key players is essential for the conservation of forest biodiversity. Training sessions and extension activities should be conducted for foresters, biodiversity monitoring experts, forest fire-fighters and other specialists from related fields.
- It is of vital importance to increase the educational capacity in the forestry discipline and to ensure the training of future specialists with gender aspects taken into account. Modern curricula incorporating best practices of forest management and biodiversity conservation should be introduced in the Agricultural University of Georgia.
- Community forest schemes should be developed that would fully consider the role and rights of local communities.

Agricultural biodiversity and natural grasslands

Main problems:

No inventory has been made (including in PAs) of landraces and CWRs (crop wild relatives) due to lack of appropriate institutional and legal framework, targeted funding and methodology. There is no detailed information on the summer and winter pastures under state ownership in respect of the number and size of plots in each municipality. There is also a lack of information regarding the status of the pastures, including levels of use, pressures, vegetation cover, productivity, etc. The lack of appropriate legal and institutional framework is a major obstacle for the conservation and sustainable use of the agricultural biodiversity of Georgia. Despite the existence of relevant regulations, there is no effective veterinary or phytosanitary control.

Needs:

- Inventories of landraces, CWRs and medicinal and food plants need to be conducted.
- Representative sites of high CWR richness should be identified and mapped.
- Georgia should ratify ITPGRFA and the Nagoya Protocol.
- The conservation of endemic agricultural species and landraces, CWRs and micro flora of traditional fermented products needs to be ensured through on farm conservation measures.
- An ex situ conservation framework needs to be established to ensure the conservation of endemic agricultural species and landraces, CWRs and microflora of traditional fermented products in live collections.
- The status and economic values of Georgia's agricultural ecosystems and natural grasslands need to be assessed.
- Strategic documents related to the sustainable management of agricultural ecosystems and natural grasslands should be developed and relevant activities should be incorporated in local action plans.
- A full inventory of summer and winter pastures that are currently under state ownership should be conducted and their current status should be assessed; terms and conditions for their privatization and lease contracts need to be defined in advance.
- It is important to mitigate all factors that have a negative impact on agricultural ecosystems, biodiversity and natural grasslands and to minimize the unfavorable effects of plant protection and veterinary chemicals.

- The legal and institutional framework needs to be improved to facilitate the conservation of agricultural ecosystems and natural grasslands as well as to minimize environmental pollution from agriculture.
- Organic farming and sustainable management practices and labeling schemes should be promoted in agriculture and pasture management.
- The National Biodiversity Monitoring System should be improved with regard to the indicators related to agricultural biodiversity and natural grasslands. The impact of climate change on agrarian biodiversity and natural grasslands needs to be assessed.
- Public awareness activities should be conducted focusing on (i) the values of the country's agricultural biodiversity and (ii) informing the public on the steps they can take to conserve and sustainably use agricultural biodiversity and natural grasslands.

Communication, education, public awareness and public participation

Main problems:

Key stakeholder groups such as decision-makers, local governments, communities, the media, the private sector (including those whose activities are directly linked to the use of biological resources), youth and young children are still poorly informed about biodiversity issues. This also leads to a low level of public participation in the decision making process and a low priority of biodiversity issues among decision-makers. Problems in teaching biodiversity At the level of formal education, more needs to be done to have biodiversity issues delivered in the classroom. Problems exist in respect of knowledge transfer and values development due to the lack of qualification and educational resources such as textbooks, Internet access and other relevant facilities. The extremely poor socioeconomic situation on the ground also contributes to low public interest and participation. The limited capacities of local NGOs working in the field of biodiversity do as well.

Needs:

- An institutional framework needs to be put in place.
- Targeted messages should be developed with full consideration of gender equality for key stakeholders such as decision-makers, the private sector, users of natural resources, the media, teachers, and key local communities.
- More trainings and conferences should be organized for key target groups, including media partners, decision-makers, the private sector, users of natural resources, teachers, students and women's groups.
- It is necessary to increase the effectiveness of existing communication mechanisms and to introduce new ones.
- It is necessary to strengthen existing and introduce new legal and institutional mechanisms for improved public participation in decision-making processes.
- Continuous teaching of biodiversity focussing on the values, status and trends of biodiversity, and on the consequences of its loss needs to be ensured;
- Volunteering should be promoted through providing training and education to potential volunteers; their participation should be encouraged in conservation activities such as biodiversity monitoring, conservation education, etc.

- Gender equality issues should be considered in providing access to (i) formal and informal education and (ii) knowledge, technologies and trainings related to the use and management of biological resources. This would increase the national capacity for halting biodiversity loss and facilitating adaptation to climate change.

Cross-cutting issues:

Main problems:

Several instruments of environmental mainstreaming exist in Georgia, but due to weak legal and institutional frameworks as well as a lack of resources, these instruments fail to ensure adequate integration of environmental issues into various development sectors.

Needs:

- Integration of biodiversity concerns across sectors is the way to recognize the value of biodiversity and ecosystem services;
- A system of Strategic Environmental Assessments of national plans, programs, etc. should be developed.
- It is necessary to improve the existing EIA procedures to ensure better consideration of biodiversity issues;
- A handbook on integrating biodiversity aspects into EIAs that considers the national context and local conditions should be developed based on the guidelines and methods developed under the auspices of the CBD and other biodiversity-related agreements.
- The recommendations of the national TEEB study should be immediately incorporated into the environmental legislation and regulations on the use of natural resources;
- It is important to stimulate the market to create incentives to safeguard the nation's biodiversity. The Georgian system for licenses and permits for the exploitation of natural resources is a strong instrument, which, depending on the overall conditions, has the potential to serve as both an incentive and a disincentive for the conservation and sustainable use of biodiversity. Therefore, this system should be thoroughly reviewed considering these aspects.
- The system of spatial planning should be reviewed and amended with the intent of integrating biodiversity concerns and aligning it with conservation planning.
- A policy should be developed to clarify and strengthen the powers of local governments in the field of conservation and sustainable use of biodiversity.
- It is necessary to establishment a national biosafety system to ensure the conservation of Georgia's rich genetic diversity.

Annex 2: Needs of Vashlovani and Tusheti PAs

NACRES, co-author of the study at hand, conducted needs assessment for both Tusheti and Vashlovani PAs in 2008 that provided a solid overview of the skills and resources within the conservation of PAs system. The assessment focused on:

- Identifying the key priorities of activity for the organization
- Identifying the responsibilities for these key activities amongst the staff
- Identifying the capacities of the staff to undertake the activities
- Identifying what training and resources staff require to increase their capacities

The following main areas were examined:

- Research and monitoring
- Education and awareness
- Law enforcement
- Tourism and visitor services
- Administration
- Managing Resource use

The results regarding the needs of improvement in both PAs are presented in the following tables:

Table 14: Training and resource needs in Vashlovani PAs

| Notable training needs | Notable resource needs |
|---|---|
| Research and monitoring | |
| <ul style="list-style-type: none"> - Monitoring skills for rangers in the field (basic introduction and refreshing of skills) - Competency standard for ranger monitoring | <ul style="list-style-type: none"> - Conservation/ natural resource use specialist - Supplementary technical equipment (meteorological station, camera traps etc.) - A dedicated vehicle for the required specialist - Monitoring and research plan is required to coordinate and direct activities with partners |
| Education and awareness | |
| <ul style="list-style-type: none"> - Planning and delivery of environmental education | <ul style="list-style-type: none"> - Interpretation specialist - Educational films on the Reserve (15-20 minutes) - Guide books on biodiversity tourism - A coffee-table book detailing Vashlovani (history of PA formation, biodiversity, historical and cultural phenomenon, tourism) |
| Law enforcement | |
| <ul style="list-style-type: none"> - further training to reinforce existing and to develop new skills - Field monitoring skills (basic induction and refresher skills) | <ul style="list-style-type: none"> - Detailed assessment of the Law Enforcement team's needs required - further staff to ensure adequate staffing during field patrol work (there is a current deficit of nine rangers) |

| | |
|---|--|
| <ul style="list-style-type: none"> - Enhanced introduction course for new starters - Refresher courses on basic equipment use - Rescue service provision and fire fighting skills - Requested weapons training | <ul style="list-style-type: none"> - improved legislation to increase authority of the rangers and the scope of corresponding fines for violations - improved salaries - weapons – to improve authority and for safety when dealing with armed poachers - Access to immediate and on-going vehicle repair services - Radio communications - Two quad bikes - Practical field uniforms for undertaking manual work - Reconnaissance and monitoring equipment - Specialized tools and uniforms for fire fighting - A monitoring strategy to guide the work of rangers including monitoring routes, fixed points, standardised data recording methods, GPS refs and times, etc. |
| Tourism and Visitor Services | |
| <ul style="list-style-type: none"> - Opportunity for exchange and learning with other reserves on visitor management (national and international) - Interpretation skills - Management of accommodation reservation systems - Marketing - Concession relationships | <ul style="list-style-type: none"> - Interpretation Specialist - Revised visitor management plan - Dedicated Infrastructure Maintenance specialist to reduce workload of rangers - Improved infrastructure, e.g. road signs, information boards and signs, routes and paths - Field communication with rangers manning tourist huts in Reserve - Creation of concession management system |
| Science | |
| <ul style="list-style-type: none"> - GIS programme use / data entry | <ul style="list-style-type: none"> - Conservation/ natural resource use specialist - Supplementary technical equipment (upgraded, camera traps etc.) - A dedicated vehicle for the required specialist - Monitoring and research plan is required to coordinate and direct the various University departments, NGOs and other specialist groups to work on areas required by the Reserve. |
| Administration | |
| <ul style="list-style-type: none"> - Programme of specialised training for all staff - strategic development/planning, fundraising and recruitment | <ul style="list-style-type: none"> - As for theme 2 and 4 - 1 interpretation specialist - As for theme 1 and 5 - natural resource specialist - As for theme 3 - nine rangers - Funds for small infrastructure development (wells, reconstruction of interpretive material etc.) |
| Natural Resource Use | |
| <ul style="list-style-type: none"> - Rangeland / pasture survey and management | <ul style="list-style-type: none"> - Notable resource needs - Implement rangeland / grazing management plan - Reintroduction of the resettlement plan |

Table 15: Training and resource needs in Tusheti PAs

| Notable training needs | Notable resource needs |
|---|--|
| Research And Monitoring | |
| <p>Training in new skill sets:</p> <ul style="list-style-type: none"> - Anti-poaching - Community outreach - Mountain rescue <p>Refresher courses/upgrades:</p> <ul style="list-style-type: none"> - Biodiversity monitoring and general field skills - Fire fighting - 1st aid - Applied GIS | <ul style="list-style-type: none"> - Rangers - Field equipment (GPS, binoculars, hand-held transceivers, compact digital cameras) - Specialized equipment (weapons, camera traps, video cameras, telescopes, meteorological stations, ArcGIS software & computer) - Fire & Rescue (Rescue equipment, generator & pumps, chainsaws, handsaws, axes, protective clothing) - Transport & movement (quad bikes, 4wd, horse livery, skis, snow chains) |
| Community and Outreach | |
| <ul style="list-style-type: none"> - Notable training needs - Fundraising Project development - Leading/running educational camps | <ul style="list-style-type: none"> - Infrastructure/equipment (particularly for educational camps & eco-routes) - Plans (Protected Landscape Management, Pasture Management and Funding plan specific to educational camps) |
| Natural & Cultural Resource Management | |
| <ul style="list-style-type: none"> - Theory of biodiversity monitoring - Applied biodiversity monitoring - GIS | <ul style="list-style-type: none"> - Cultural resource specialist - GIS (software and computer) - Input from external scientists/researchers |
| Tourism and Visitor Services | |
| <ul style="list-style-type: none"> - Market Research - Visitor service - Interpretation - Web site administration <p>As well as some refresher courses:</p> <ul style="list-style-type: none"> - 1st aid - Rescue - GIS <p>And for local communities::</p> <ul style="list-style-type: none"> - Foreign language skills - Visitor management | <ul style="list-style-type: none"> - Personnel (cultural resource specialist, eco-routes expert and English teacher) - Communications & printed materials (reliable internet connection, information leaflets, books on developing ecotourism, market research questionnaire) - Infrastructure (trail-markers, interpretive signs etc) - Services (renovation & maintenance of trail infrastructure, resource inventory, tour packages) - General equipment (GIS software, cameras, video camera, laptops for the specialists) - Marketing campaign - Exchange programmes with PAs abroad |
| Science | |
| <ul style="list-style-type: none"> - GIS programme use / data entry | <ul style="list-style-type: none"> - Conservation/ natural resource use specialist - Supplementary technical equipment including an upgraded meteorological station, field guides, five new camera traps + batteries for these and 3 existing traps + memory cards - A dedicated vehicle for the required specialist |

| | |
|---|--|
| | <ul style="list-style-type: none"> - Monitoring and research plan is required to coordinate and direct the various University departments, NGOs and other specialist groups to work on areas required by the Reserve. |
| Administration | |
| <ul style="list-style-type: none"> - Use of accounting software - Planning budgets (short- and long-term) <p>Refresher courses:</p> <ul style="list-style-type: none"> - Practical accounting - General administration (to keep in-line with new government requirements) - Media communications - Writing articles - Visitor service and interpretation | <ul style="list-style-type: none"> - Reliable internet connection - Software (accounting and GSS) - New winter office - Additional funds (for phone calls and for local transportation) |

Annex 3: Overview of stakeholder consultations conducted within the feasibility study

1. Consultation on the national level in September 2015:

Working group “Perspectives of biosphere reserve formation in Georgia” at the Georgian Ministry for Environment and Natural Resources Protection, 16.09.2015

Agenda:

Table 16: Agenda of group meeting on national level in September 2016

| Time | Subject |
|--------------|---|
| 10:00- 10:10 | Opening of the meeting, Introduction of participants Karlo Amirgulashvili (Head of Forest Policy Service) |
| 10:10-10:30 | Presentation – Results of country-wide screening for potentials for Biosphere Reserve Development in Georgia Sophie Hirschelmann (Michael Succow Foundation for the Protection of Nature) |
| 10:30-10:50 | Questions and Discussion of results |
| 10:50-11:30 | Discussion on next steps and status of working group Moderation by Karlo Amirgulashvili |
| 11:30 | Closing of the meeting |

Participants:

Table 17: Participants list of group meeting on national level in September 2016

| | Name | Organisation | | Name | Organisation |
|---|------------------------|---|----|----------------------|-----------------------|
| 1 | Marika Qavtarishvili | IUCN | 11 | Karlo Amirgulashvili | Mo ENPD/FPS |
| 2 | Irakli Shavgulidze | NACRES | 12 | Beso Abashidze | MOE |
| 3 | Natia Iordanashvili | NFA | 13 | Lasha Khisanishvili | FPS |
| 4 | Lasha Moistsrapishvili | APA | 14 | Akaki Chalatahshvili | FPS |
| 5 | Toma Dekanoidze | APA | 15 | Gigia Aleksidze | Forest Policy Service |
| 6 | Gocha Aronoshidze | Patriarchy of Georgia Foundation “Let’s Make Georgia Green” | 16 | Merab Machavariani | NFA |

| | | | | | |
|----|------------------------|--------|----|---------------------|-----|
| 7 | Marika Qavtarishvili | IUCN | 17 | Lika Giorgadze | FPS |
| 8 | Irakli Shavgulidze | NACRES | 18 | Kirsten Meuer | MSF |
| 9 | Natia Iordanashvili | NFA | 19 | Sophie Hirschelmann | MSF |
| 10 | Lasha Moistsrapishvili | APA | | | |

2. Consultations in February 2016

Aims:

- To inform about the project and initiative of BR development in Georgia
- To introduce and discuss the UNESCO BR concept
- To discuss strengths and weaknesses in regard to the BR concept and development on the national level
- To analyze concerns, problems and positive preconditions in Kakheti region that could be approached and built on during a possible BR development
- To get to know the interest and willingness to contribute or engage in the BR initiative
- To agree on next steps

Overview:

Table 18: Overview of stakeholder consultations in February 2016

| Date | Participants of the meeting | Place |
|----------|--|----------------|
| 08.02.16 | NGOs in Dedoplistskaro municipality (see participants list attached) | Dedoplistskaro |
| 09.02.16 | Staff of administration of Vashlovani protected areas | Dedoplistskaro |
| 09.02.16 | Head of Dedoplistskaro municipality, Representative of the Agency of Forestry from the Dedoplistskaro forest district | Dedoplistskaro |
| 09.02.16 | First deputy governor of the State Attorney in Kakheti | Telavi |
| 10.02.16 | Head and deputy head of Akhmeta Municipality, Representative of the Agency of Forestry from the Akhmeta forest district, Resource centre Akhmeta Municipality, Head of Tusheti Protected Areas | Akhmeta |
| 10.02.16 | NGOs in Akhmeta municipality (see participants list attached) | Alvani |
| 10.02.16 | Deputy head of Akhmeta Municipality | Akhmeta |
| 11.02.16 | Head of Tusheti protected areas and Tusheti protected landscape | Alvani |
| 11.02.16 | Deputy minister of Ministry of Environment and Natural Resources Protection (Mrs. Grigalava) | Tbilisi |
| 12.02.16 | Agency of Protected Areas | Tbilisi |

| | | |
|----------|---|---------|
| 12.02.16 | National Food Agency, Veterinary Department | Tbilisi |
| 12.02.16 | Kakheti Regional Development Fund | Tbilisi |
| 12.02.16 | Municipal Development Fund (Deputy Executive Officer and staff) | Tbilisi |
| 15.02.16 | GIZ (IBiS Georgia) | Tbilisi |
| 16.02.16 | Ministry of Environment and Natural Resources Protection, Forest Policy Service | Tbilisi |
| 16.02.16 | Ministry of Economy, Department of Sustainable Development | Tbilisi |

Participants list of group meetings:

Group meeting with NGOs in Dedoplistskaro (08.02.2016)

Table 19: Participants of group workshop Dedoplistskaro

| | Name | Organisation | | Name | Organisation |
|---|---------------------|--|----|-----------------------|-------------------------------------|
| 1 | Amiran Kodalashvili | GIZ | 7 | Dachi Tavadze | Association of Vashlovani Friends |
| 2 | Mariam Mrevlishvili | NACRES | 8 | Natia Kobakhidze | GIZ |
| 3 | Vano Skhirtladze | | 9 | Petre Khutsharashvili | Khornabuji Hereti Eparchy |
| 4 | Besik Topchishvili | LTD „Dedoplistkaros Nobati“ | 10 | Khatia Kobaidze | LTD “Pirosmani” |
| 5 | Giorgi Kikilashvili | LTD „Zedash“ | 11 | Neli Gobejshvili | „Pirosmani”, family hotel “Megzuri“ |
| 6 | Ana Benashvili | Dedoplistskaro Municipality Governance | | | |

Group meeting with NGOs in Akhmeta (10.02.2016)

Table 20: Participants of group workshop Akhmeta

| | Name | Organisation | | Name | Organisation |
|---|--------------------|---------------------------|----|-----------------------------|--------------------------------|
| 1 | Shorena Elanidze | “Tushetis Nobati” | 13 | Paata Abulidze | Cooperative “Alaznis Tavi” |
| 2 | Nani Arshaulidze | Family Hotel | 14 | Amiran Kodiashvili | GIZ |
| 3 | Rusudan Otariidze | Traditional crafts master | 15 | David (Zurab) Murtazashvili | Association „Tushi Metskhvare” |
| 4 | Marine Ghuzarauli | Cooperative Tusheti | 16 | The Metropolitan David | |
| 5 | Mari Khachidze | Tushetian Brand | 17 | Natia Kobakhidze | GIZ |
| 6 | Asmat Kurdgelaidze | potato grower | 18 | Dali Veshagiridze | „Nergebi“ |

| | | | | | |
|----|-----------------------|--------------------------------|----|------------------------|-----------------------------|
| 7 | Irodi Sakukvadze | Cooperative “Tushetis Nobati” | 19 | Eka Telauridze | Tusheti Friends Association |
| 8 | Vakhtang Giunaidze | Tusheti PAs | 20 | Makvala Meladze | Cooperative Tusheti |
| 9 | Zurab Babulaidze | Tusheti Development Foundation | 21 | Teimuraz Terterashvili | MAAtani XXI |
| 10 | Shorena Chapurishvili | NGO „ELKANA“ | 22 | Lia Papiashvili | Cooperative –Alvali- |
| 11 | Irakli Aptarauli | LTD “Alvani Transport Agency | 23 | Beiski Kibilashvili | Cooperative –Alvali-Agro |
| 12 | Nukri Ghubianuri | „SakobianoXXI” | 24 | Anzor Gogotidze | Eco Consulting |

3. Stakeholder consultation in June 2016 with Tush livestock owners and shepherds

17.06.2016, Dartlo (Tusheti)

Aims:

- To inform about the project and initiative of BR development in Georgia
- To introduce and discuss the UNESCO BR concept
- To analyze concerns, problems and positive preconditions in Kakheti region that could be approached and built on during a possible BR development
- To get to know the interest and willingness to contribute or engage in the BR initiative

Participants:

Table 21: Participants of stakeholder consultation with shepherds and livestock owners in Tusheti

| | Name | | | Name | |
|---|------------------|-----------------|---|------------------|------------------|
| 1 | Otar Phareulidze | Livestock owner | 5 | Jimsher Lekaidze | Shepherd |
| 2 | Badri Lekaidze | Livestock owner | 6 | Vaja Idoitze | Shepherd |
| 3 | Beso Idoitze | Livestock owner | 7 | Beso Elanidze | Guesthouse owner |
| 4 | Zviad Bughrdze | Livestock owner | 8 | Irakli Elanidze | TPA ranger |

4. Stakeholder consultations in July 2016

Goal:

To get feedback from stakeholders on feasibility study draft results and agree on next steps.

Objectives:

- Inform stakeholders about current state of project and present draft results of feasibility study
- Get comments and feedback on the draft results
- Discussion and prioritization of scenarios
- Clarify open questions, collect remaining open questions

- Form interest groups based on collected problems and needs
- Get to know needs and readiness for involvement
- Agree on next steps

Consultation of local stakeholders in Kakheti, 26.07.2016

Participants:

| | Name | Organisation | | Name | Organisation |
|---|------|--------------|----|------|--------------|
| 1 | | | 10 | | |
| 2 | | | 11 | | |
| 3 | | | 12 | | |
| 4 | | | 13 | | |
| 5 | | | 14 | | |
| 6 | | | 15 | | |
| 7 | | | 16 | | |
| 8 | | | 17 | | |
| 9 | | | | | |

Working group “Perspectives of biosphere reserve formation in Georgia” at the Georgian Ministry for Environment and Natural Resources Protection, 28.07.2016

Agenda:

Table 22: Agenda of stakeholder consultation on national level in July 2016

| Time | Subject |
|---------------------|---|
| 10:00- 10:10 | Opening of the meeting, Introduction of participants Beso Abashidze (Deputy Minister, Ministry of Environment and Natural Resources Protection Georgia) Karlo Amirgulashvili (Head of Forest Policy Service, Ministry of Environment and Natural Resources Protection Georgia) |
| 10:10-10:40 | Presentation – Results of feasibility study for the development of a UNESCO biosphere reserve in Kakheti Sophie Hirschelmann (Succow Foundation) |
| 10:40-11:15 | Questions and Discussion of results |
| 11:15-11:30 | Short report from stakeholder meetings in Kakheti With representatives from Kakheti |

| | |
|--------------------|--|
| 11:30-12:20 | Prioritisation of scenarios for biosphere reserve development in Kakheti and next steps Moderation by Uli Gräbener (Succow Foundation) |
| 12:30 | Closing of the meeting |

Participants:

Table 23: Participants list of stakeholder consultation on national level in July 2016

| | Name | Organisation | | Name | Organisation |
|----|------|--------------|----|------|--------------|
| 1 | | | 11 | | |
| 2 | | | 12 | | |
| 3 | | | 13 | | |
| 4 | | | 14 | | |
| 5 | | | 15 | | |
| 6 | | | 16 | | |
| 7 | | | 17 | | |
| 8 | | | 18 | | |
| 9 | | | 19 | | |
| 10 | | | | | |

Annex 4: Stakeholders of a possible BR implementation

Table 24: Details on stakeholders displayed in the stakeholder map in chapter 2.4.3

| Stakeholder | Short Description | | Representative / Responsible person |
|---|---|---|---|
| | Main Function / Interest | Possible Role | |
| Key stakeholders | | | |
| Ministry of Environment and Natural Resources Protection (MoENRP) | Sustainable management of natural resources of Georgia | Project main partners from the state side and veto player | |
| MoENRP – Forest Policy Service (FPS) | Forest policy and forest strategy development | Project main partners from the state side | Karlo Amirgulashvili – Head of the FPS |
| MoENRP – Service of Biodiversity Protection (SBP) | Drawing and implementation of state policy in the field of biodiversity protection and management of biological resources, organization and coordination state system of biodiversity monitoring. | Project main partners from the state side | |
| Agency of Protected Areas (APA) | Primary responsibility to manage Georgia’s protected areas. | Project main partners from the state side | Lasha Moistrapishvili - Head of the APA |
| Ministry of Foreign Affairs – Department of International Cultural and Humanitarian Relations | UNESCO Commission Georgia | Suupport for MaB Committee, Communication with UNESCO | Lali Meskhi |
| Georgian MAB committee | Support of BR development, representing Georgia in EuroMAB, sending of nomination documents etc. | Project main partners from the state side | |

| | | | |
|---|---------------------------------------|---|---|
| Local government Akhmeta and Dedoplistskaro municipalities (Gamgeoba, Sakrebulo) | Governance at Municipal / Local Level | Important partner in terms of BR management | Beka Baidauri – Governor of Akhmeta municipality Nikoloz Janiashvili - Governor of Dedoplistskaro municipality |
| NGO's and CBO's from Akhmeta and Dedoplistskaro municipalities (see tables 22-24 below) | | Important partner in terms of BR management | |
| Local Population | | Important partner in terms of BR management | |
| Local Businesses | | Important partner in terms of BR management | |
| Primary stakeholders | | | |
| Local Population | | Major target group for the BR Main affected group by the BR | |
| Local Businesses | | Major target group for the BR activities | |
| Administration of the state attorney-governor in Kakheti region | Governance at Regional / Local Level | Important partner for the BR development | Irakli Shiolashvili – Governor of Kakheti Region |
| Telavi municipality | Governance at Municipal / Local Level | Governance at Municipal / Local Level Possible future partner for the BR Development | Aleksandre Shatirishvili - Governor of Telavi municipality |
| Sagarejo municipality | Governance at Municipal / Local Level | Possible future partner for the BR Development | Giorgi Gzirishvili - Governor of Sagarejo municipality |
| Kvareli municipality | Governance at Municipal / Local Level | Possible future partner for the BR Development | Ilia Mzekalashvili - Governor of Kvareli municipality |

| | | | |
|---|---|--|---|
| Gurjaani municipality | Governance at Municipal / Local Level | Possible future partner for the BR Development | Gia Gergidze - Governor of Gurjaani municipality |
| Lagodekhi municipality | Governance at Municipal / Local Level | Possible future partner for the BR Development | Karlo (Kakha) Jamburia - Governor of Lagodekhi municipality |
| Signaghi municipality | Governance at Municipal / Local Level | Possible future partner for the BR Development | Davit Janikashvili - Governor of Signaghi municipality |
| Administrations of PA's | Management of the PA's at the local level | Important partner for the BR Development | |
| National Forest Agency (NFA) | Manage of the state forests of Georgia | Important partner for planning and implementing | Tornike Gvazava – Head of the NFA |
| National Environmental Supervision Department (NESD) | Ensure of the implementation of state control in the field of environmental protection and use of natural resources within the Georgia | Potential partner for the BR Development | Neli Korkotadze – Head of NESD |
| International Climate Initiative (IKI) | Promoting a climate-friendly economy and measures for climate change adaptation / mitigation | Project donor | |
| UNDP | UNDP assists Georgia in four major areas: Democratic governance; Economic development; Environment and energy and Crisis prevention and Recovery | Implementer of the PA related project in the target area; Potential partner | Nino Antadze - Team Leader, Environment and Energy portfolio at UNDP Georgia |
| GIZ IBiS (Integrated Biodiversity Management in the South Caucasus) | Development of strategies to facilitate the sustainable management of biodiversity and ecosystem services across sectorial and administrative boundaries. | Implementer of the PA related project in the target area; Potential partner | Hans Joachim Lipp - Programme director |
| Czech Development Agency | The main tasks of CzDA are to identify, formulate, implement and monitor projects in priority partner countries | Implementer of the PA related project in the target area; Potential partner | Jan Chernik, Head of Eastern Europe (Moldova, Georgia) Territorial Department |

| | | | |
|---|---|---|---|
| UNESCO MAB Programme (including International Coordinating Council ICC) | Conservation of the resources of the biosphere and improvement of the overall relationship between people and their environment | Main decision maker in terms of establishment of BR and veto player. | |
| Secondary stakeholders | | | |
| Parliament of Georgia | Implementation of the legislative authority | Main legislative body in the country. | Gia Zhorzholiani - Chairman of the Environmental Protection And Natural Resources Committee |
| Ministry of Agriculture | Development of agriculture strategy and promoting financial resources in this sphere of economic sector | Potential partner for the BR Development activities planning. | Khatia Tsilosani - Head of International Relations Department |
| MoA - National Food Agency | Ensure food security of the country | Potential partner for the BR Development activities planning | Zaza Dolidze - Head of the Agency |
| MoA - Agriculture Projects Management Agency | Manage the projects developed and planned by the MoA | Potential partner for the BR Development activities planning | Marina Morgoshia - Head of the Agency |
| MoA - Agriculture Cooperative Development Agency | Facilitating agriculture development through development of the agriculture cooperatives | Potential partner for the BR Development activities planning | Giorgi Misheladze - Head of the Agency |
| Ministry of Education and Science | The Ministry aims at establishing modern and innovative educational and scientific environment in close cooperation with civil society. | Potential partner for the BR Development activities planning in the field of education and awareness raising. | Nino Tuskia - Head of International Relations and Programs Department |
| Ministry of Economy and Sustainable Development | Develop and implement of the country's economic development goals based on the existing legislation | Potential partner for the BR Development activities planning | Tea Bolkvadze – Head of the Public Relation Department |

| | | | |
|---|---|---|---|
| MoESD - National Tourism Administration | formation and implementation of the Georgian tourism development state policy, promotion of the sustainable tourism development, promotion of a high export income growth and job creation in the country on the basis of the tourism development, attraction of the foreign tourists to Georgia and development of the domestic tourism as well | Potential partner for the BR Development activities planning in the field of tourism development. | Giorgi Chogovadze - Head of the Tourism Administration |
| MoESD - Spatial Planning and Construction Policy Department | Define, implement, coordinate, manage and monitor the policy in the field of Spatial Planning and Construction Activities | Potential partner for the BR Development | David Giginishvili - Head of the Department |
| MoESD – Sustainable Development Department | Development “green strategy” of the country. Creation state programs to support “green strategy”. Definition investment profiles and resources of the country and support their sustainable uses. | Potential partner for the BR Development | Nino Kvernadze - Head of the Department |
| Ministry of Culture | Development and implementation of the common policies in the field of culture and cultural heritages | Potential partner for the BR Development | Levan Kharatishvili - Deputy of the minister |
| Ministry of Regional Development and Infrastructure (MRDI) | Objectives of the ministry: Development of regional development policies; Decentralization and deconcentrating of the governance system; supporting entrepreneurship, incentivizing investment activities, creating jobs, development of social infrastructure; elaboration of regional socio-economic development plans and programs and coordination of their implementation; | Potential partner for the BR Development | Khatunda Paichadze - Head of the public relation department |

| | | | |
|---|---|--|--|
| Municipal Development Fund (MDF) | Support strengthening institutional and financial capacity of local government units, investing financial resources in local infrastructure and services, improving on sustainable basis the primary economic and social services for the local population (communities), developing renewable energy sources, rehabilitating irrigation and drainage systems, provision of low-interest loans to legal entities and physical persons of Georgia in the framework of the Government Program, Technical Assistance for Foreign and Georgian physical bodies and legal entities for business development in Georgia | Potential partner for the BR Development | Juansher Burtchuladze – Executive Director |
| Ministry of Energy | | potential partner for the BR Development | Davit Sharikadze – Head of Energy Department |
| The Georgian Orthodox Church | | | |
| Ivane Javakhishvili state university | | Potential implementation partner for the BR Development | |
| Ilia state university | | Potential implementation partner for the BR Development. | |
| Iakob Gogebashvili Telavi State University | | Potential implementation partner for the BR Development | |
| International Union for Nature Conservation | IUCN promote them to mitigate and adapt to climate change, secure water, food and energy supplies, reduce poverty and drive economic growth. | Potential partner for the BR Development Consortium partner of FLEG 2; Participation in National Forest Programme. | Tamar Pataridze - Regional Councillor for East Europe, North and Central Asia |
| European Union (FLAG, TWINNING, ENPARD) | Supports Georgia in the development of its economy and improvement management of natural resources | Potential Partner. | Ortega Aparicio Alvaro - Programme Manager of the European Union Delegation to Georgia |

| | | | |
|------------|---|---|--|
| World Bank | End extreme poverty within a generation and boost shared prosperity. | Potential Partner; Consortium partner of FLEG 2; participation in NFP. | Darejan Kapanadze - Operation Officer, Environmentally and Socially Sustainable Development, The World Bank Office Tbilisi |
| USAID | Partnership for to end extreme poverty and to promote resilience, democratic societies while advancing security and prosperity | Potential Partner | Tamar Barabadze - Office of Energy and Environment, USAID Georgia |
| USFS | The agency seeks to foster sustainable natural resource management, biodiversity conservation, climate change mitigation & adaptation, and disaster preparedness & response throughout the world | Potential Partner | Mariam Tevzadze - National Coordinator. USFS |
| KfW | Supports Georgia in the development of its energy sector and municipal infrastructure. Also, in the creation of national parks which are designed to preserve the unique species diversity consistent with the needs of the rural population. | Potential Partner; Support Programme for Protected Areas in the Caucasus - Georgia at GFA Georgia. | Lars Oermann - Director KfW Office |
| ADA | Aims at reducing poverty, conserving natural resources and promoting peace and human security in partner countries | Potential Partner; Implementer of the projects: Windbreaks, wheat cultivation and fuel wood supply in Dedoplistskaro Municipality; Support of forest sector reform and forest education. | Nikoloz Grdzeldze – South Caucasus national programme officer |
| CNF | Contribute to the improved management and sustainable development of the Caucasus' natural and cultural heritage by providing effective long-term funding support to the protected areas of Armenia, Azerbaijan and Georgia | Potential Partner. | Tea Barbakadze - National Program Coordinator Georgia |

| | | | |
|-------------------|--|---|--|
| WWF | Stop the degradation of earth natural environment, and build a future in which humans live in harmony with nature | Potential Partner; Consortium partner of FLEG 2; Participation in NFP. | Nugzar Zazanashvili - WWF Caucasus, Conservation Director |
| FFI | A sustainable future for the planet, where biodiversity is effectively conserved by the people who live closest to it, supported by the global community | Potential Partner | Gareth Goldthorpe – Flora & Fauna International Regional Technical Coordinator |
| Mercy Corps | Alleviate suffering, poverty and oppression by helping people build secure, productive and just communities | Potential Partner | Irakli Kasrashvili - Mercy Corps Country Director in Georgia |
| NACRES | | Potential implementation partner for the project. | Irakli Shavgulidze - Director |
| RECC Caucasus | Assist in solving environmental problems as well as development of the civic society in the countries of the South Caucasus | Regional NGO. Potential Partner. | Sophio Akhobadze - Director |
| Green Alternative | Protect the environment, biological and cultural heritage of Georgia through promoting economically sound and socially acceptable alternatives | National NGO. | Manana Kochladze - Chairwoman |
| Green Movement | Protect the environment, human and ethno-cultural surroundings according to the principles of sustainable development | National NGO. | Nino Chkhobadze - Chairwoman |
| CENN | Foster modern and sustainable development values and practices through bridging society and environment. | National NGO. | Nana Janashia - Executive Director |
| ELKANA | improvement of the socio-economic conditions of the Georgian population and environmental protection through the fostering the development of sustainable organic farming and increasing self-reliance of the rural population | National NGO; Working with farmers' associations in Kakheti Region; Experience in bio-farming. | Mariam Jorjadze - Director |

| | | | |
|--|---------------|--------------------|------------------------------|
| Local NGO's and CBO's (see tables 22-24 below) | | Potential Partners | |
| TV Station "Gurjaani" | TV Station | Potential Partner | Tamar Abelashvili - Director |
| Radio "Hereti" | Radio Station | Potential Partner | Tamaz Samkharadze - Director |
| Newspaper "Kakhetis Khma" (Voice of Kakheti) | Newspaper | Potential Partner | Maia Mamulashvili - Editor |

NGOs and CBOs

There are a number of Non-Governmental Organizations (NGOs) actively involved in the regional development processes in Kakheti. In relevance to the project objectives, the organizations that have direct interests in the development of PAs in the Kakheti region are of primary importance. Among them are the associations of Friends of PAs, which were established with the help of the IUCN South Caucasus program office. The mandate and purpose of these organizations are (i) to contribute to nature conservation activities on the grounds, (ii) facilitate the development of sustainable tourism, (iii) to support the local population and environmental awareness.

There are other local NGOs in Kakheti that are active in such fields as socio-economy, agriculture, tourism, environment and education. The information on organization whose activities are more or less relevant to the project objectives is presented in the following tables. It is however important to note that local NGOs' activities are often project-based i.e. they are active if/when they have a current project and tend to become "dormant" when they have no on-going project.

Table 25: NGOs, CBOs and local businesses in Akhmeta municipality

| Organization | Main interest / objectives | Address / Location | Contact person |
|------------------------|---|--|----------------|
| Friends of Tusheti PAs | Protected areas Environmental protection. Environmental education. Eco tourism | Village Qvemo Alvani Akhmeta municipality | Eka Telauridze |

| | | | |
|---|---|---|---|
| Tusheti Guide | Tourism development; Ecotourism; Community development; Education; Environmental protection | Village Alvani, Akhmeta municipality | Giorgi Bakuridze |
| Alvani 2000 | Community development Agriculture; Education; Environmental protection | village Kvemo Alvani, Akhmeta municipality | Anzor Gogotidze |
| Association "Tushetian Shepherd" | Agriculture Community development | Village Omalo, Akhmeta municipality | David Murtazashvili |
| Union Tusheti Development Fund | Regional development Community development Education Civil society development | Village Kvemo Alvani, Akhmeta municipality | Zura Babulaidze |
| Tusheti XXI | Community development | Village Omalo, Akhmeta municipality | Gela Bakhturidze |
| NGO "Kakheti" | Community development Agriculture; Education; Social issues. | 7, mothers str., Akhmeta | Natalia Dakishvili |
| NGO "Akhmeta" | Community development Agriculture; Education; Social issues. | 41, Cholokashvili str. Akhmeta | Shorena Chapurishvili |
| Georgian Kist Women Fund "Marshua Kavkaz" | Community development Education; Social issues; Civil society. | Village Duisi, Pankisi, Akhmeta Municipality | Nata Borchashvili |
| Pankisi Elderly Council | Community development; Education. | Village Duisi, Pankisi, Akhmeta Municipality | Khasho Khangoshvili Shenta Kavtarashvili |
| Pankisi Elder Women Council | Community development; Education. | Village Duisi, Pankisi, Akhmeta Municipality | Sveta Borchashvili |
| Georgian Shepherd's Association | Sheep farming | Tbilisi based | Rati Kochlamazishvili |
| Traditional Wine making Association | | Kvareli | Irine Pkhovelishvili |

| | | | |
|-------------------------------------|---|------------------------------------|---|
| Kakheti Regional Development Center | Civil Society Development, Support of Pankisi people, integration and information of minorities and youth | 116, Tsereteliave., Tbilisi | Tamar Bekauri |
| Union “Shiraki Farmers House” | Community development; Agriculture; Education. | 18, Pirosmeni str., Dedoplistskaro | Vakhtang Kikilashvili |
| Cooperative “Tushetis Nobati” | | | Shorena Elanidze, Irodi Sakukvadze |
| Family hotel | Local business | | Nani Arshaulidze |
| Traditional crafts master | Crafts | | Rusudan Otariidze |
| Cooperative Tusheti | | | Marine Ghuzarauli, Makvala Meladze |
| Potato grower | Local business | | Asmat Kurdgelaidze |
| LTD “Alvani Transport Agency” | | | Irakli Aptarauli |
| “Sakobiano XXI” | | | Nukri Ghubianuri |
| Cooperative “Alazanis Tavi” | | | Paata Abulidze |
| “Matani XXI” | | | Teimuraz Terterashvili |
| “Nergebi” | | | Dali Veshagiridze |
| Cooperative Alvani-Agro | | | Lia Papiashvili, Beiski Kibilashvili |

Table 26: NGOs, CBOs and local businesses in Dedoplistskaro municipality

| Organization | Main interest / objectives | Address / Location | Contact person |
|--|---|------------------------------------|--------------------|
| Vashlovani Protected Areas Friends Association | Protected areas Environmental protection. Environmental education. Eco tourism | 18, Pirosmeni str., Dedoplistskaro | Amiran Kodiashvili |
| Community Based Organization “Khornabuji” | Community development Civil Society development | 31, Hereti str., Dedoplistskaro | Manana Khatashvili |

| | | | |
|---|--|---|------------------------|
| | Culture; Education. | | |
| Union “Shiraki Farmers House” | Community development; Agriculture; Education. | 18, Pirosmeni str., Dedoplistskaro | Vakhtang Kikilashvili |
| Dedoplistskaro Winemakers Union | Agriculture; Community development; Education. | Village Arkhiloskalo, Dedoplistskaro Municipality | Nikoloz Beniaidze |
| Society Dedoplistskaroeli | Agriculture; Tourism. | 18, Pirosmeni str., Dedoplistskaro | Giorgi Kikilashvili |
| New Horizon | Community development Education; Civil society; Tourism; Environmental protection. | 44, Agmashenebeli str., Dedoplistskaro | Ana Benashvili |
| Agrarian and Environmental Association | Community development Agriculture; Education; Environmental protection. | 44, Kostava str., Dedoplistskaro | Gela Tetrauli |
| Union “Pirosmeni” | Tourism; Culture; Education. | 97, Megobroba str., Village Tsiteltskhara, Dedoplistskaro Municipality | Neli Gobejishvili |
| Dairy Enterprise (MCC) | Local Business | Dedoplistskaro | Besik Topchishvili |
| Veterinary Shop | Local Business | Dedoplistskaro | Beka Gonashvili |
| Machinery service | Local Business | Dedoplistskaro | Duglas (Dachi) Tavadze |
| Traditional Wine making Association from Kvareli | | | Alexi Dzuliashvili |
| LTD „Dedoplistkaros Nobati“ | Local Business | | Besik Topchishvili |
| LTD „Zedashe“ | Local Business | | Giorgi Kikilashvili |
| „Pirosmeni”, family hotel “Megzuri“ | | | Neli Gobejishvili |

Table 27: Relevant NGOs active in Kakheti

| Organization | Main interest / objectives | Address / Location | Contact person |
|---|--|------------------------------------|-----------------------|
| Kakheti Information Center | Media; Civil society Social sphere | 1, Ioseb Noneshvili str. Gurjaani | Gela Mtivlishvili |
| Media center Kakheti | Media | 4, Ioseb Noneshvili str., Gurjaani | Ilia Sakvarlishvili |
| Georgian Society of Nature Friends GSNF | Environmental protection Education Social sphere | 30, Kurdgelauri str., Telavi | Kakha Sukhitashvili |
| Green academy | Education; Environmental protection; Ecotourism | 3, 9 aprili str., Tsnori | Giorgi Cherkezishvili |
| Kakheti Traditional Winemaking Association | Agriculture | 56, Guramishvili str., Kvareli | Aleksi Dzuliashvili |
| NGO “TEMI” | Community development; Agriculture | Gremi | Mari Khachlishvili |
| NGO “Momavlis Mitsa” | Community development; Agriculture | Argokhi | Jean-Jaques Jacob |
| ELKANA | | | Shorena Chapurishvili |

Annex 5: Analysis of legal framework in regard to BR establishment and recommendations

Paata Turava, June 2016

(with contributions from Mireille Jardin)

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Introduction

Biosphere is an environment where life is possible. The word “reserve” originates from Latin and means “preservation”. For centuries people have used natural resources. As a result of management, natural landscapes have turned into cultural landscapes. In certain regions natural, untouched environment has been preserved. Development and protection of such environment is of vital importance. Preservation of natural environment does not mean strict protection, but sustainable use and management that will ensure economic benefits for current and future generations.

When establishing legal basis of biosphere reserve (BR), we should envisage the fact that the status of BR does not require it to fall under the category of protected area (PA). The selected territory should meet UNESCO criteria of „Man and Biosphere“ program. Recognition of the

territory and its inclusion in the international network attaches it such status. This is why the correspondence between national legislation and UNESCO concept is so important.

A BR as a national legal category may exist without its recognition by UNESCO. The given document is an analysis of the legal basis for the selection of the territory as a BR, based on UNESCO criteria, as well as nomination and management of the reserve. Thus, legal settlement of the issue in Georgia does not imply attaching the territory the status of PA, but its selection as candidate, its nomination and recognition, in accordance with UNESCO procedures, as well as settlement of management issues in case the territory is recognized as BR, based on UNESCO procedures.

In order to work out the concept of legal basis of BR in Georgia, it is necessary to have a correct understanding of the essence of this institution.

A BR is not a PA (it is more than a PA). It is a modal instrument which shows on the example of a selected territory how environmental (ecological) and beneficial (economic) interests can coexist. By way of involvement of the local population, the concepts of protection, maintenance and sustainable use of a BR are worked out. The aim of the international network of BRs is to support the protection of biodiversity and natural resources within the reserve, sustainable management, research of technologies and innovations and sharing of knowledge and experience.

A BR is a model territory, the sustainable development of which should be based on ecological, economic and social interests. The issue refers not only to the protection of nature, but to interdisciplinary approach, focusing on MAN as part of the biosphere. Social and economic issues like income (profit), urbanization problems and demographic problems are part of the concept. Its priorities are preservation of biodiversity and ecosystem functions, participatory management and development of cultural landscapes, support of adaptation to climate change, development of preconditions for ecological, social and cultural sustainability. Involvement of the population in the management of the selected territory is one of the central issues. Implementation of the concept should ensure protection of biodiversity for the interests of future generations and social and economic welfare of the current generation.

The given analysis aims to study the feasibility of establishing a BR in Georgia, based on the following: description of the existing situation, namely, critical analysis of Georgian law on the system of PAs and recommendation of the necessary reforms. Every paragraph of the given analysis contains the author's conclusions based on UNESCO requirements¹¹.

¹¹ Stated in the following documents: 1) MAB Statutory Framework and Seville-Strategy, (3) MAB Strategy for the period 2015-2025, (4) The model law provided by Bonnin and Jardin (2009) (was positively considered by the ICC at its 21st session in Jeju, South Korea, and by various meetings such as a sub-regional workshop held in the Russian Federation in September 2010 on "Biosphere reserve concept in the framework of national legislations: challenges, best practices and steps forward of cluster countries of the UNESCO Moscow Office, the Baltic States and Ukraine")

1. Georgian Law on the System of Protected Areas

The Georgian law on “The System of Protected Areas“ (hereinafter “the Law”) so far regulates the issues of establishing a BR. With regard to legal settlement of the issue, the following points may be outlined:

1. The Aim of Establishing Biosphere Reserves

Article 10 of the Law defines the aims of establishing BRs: a BR is created with the aim of protection of the nature, natural processes and biologically diverse, dynamic and self-regulating environment, preservation of the environment, global monitoring of the environment, scientific research, recreational and educational activities.

Neither the above-mentioned norm, nor the first paragraph of the law, which defines the objectives of PAs, gives a complete answer to the aspects of establishing BRs defined by the UNESCO program “Man and Biosphere” (MaB). It focuses solely on the protection aspect. The legislator does not envisage the component of sustainable development defined by the UNESCO concept for BRs. According UNESCO attitude and Seville strategy, the aim of establishing a BR is to perform the following three functions:

- a) Protection: Landscapes and ecosystems with their genetic diversity should be protected. The formation of BR aims at the protection of natural ecosystems, free from human interference, as well as maintenance of cultural landscapes by means of traditional agricultural methods.
- b) Development: Within a BR, economic development should be sustainable from the socio-cultural and ecological points of view. Pilot concepts aimed at environmental-friendly use of soil and resources should be implemented on the territory of BR with the involvement of local population.
- c) Support of research and education¹²: Environmental education, research and observation should be supported. A BR is a favourable place for ecosystem research. It enables to find solutions based on local interests to meet the needs of both the nature and the people to equal extent.

¹² Article 3 of the “Statutory Framework” mentions logistic support. In order to avoid terminological misunderstanding, in this document we underline the content of this term and call it the function of research and education.

The three functions and zones defined in UNESCO documents must be established based on local peculiarities and needs. Based on the flexibility and creativity of UNESCO concept of biosphere reserve, the Georgian law should clearly define the aims of establishing the biosphere reserve, including the aim of sustainable economic development. The goal of establishing a biosphere reserve, defined by the law, is imperfect and impracticable.

2. The Criteria for the Selection of Territories

Article 10 of the Law defines the criteria for the selection of the territory. A BR implies a territory with one or more natural and natural-anthropogenic objects of international value. According to the Law, such objects are:

- a) Natural patterns representing a biome;
- b) Territories of special importance embracing unique natural phenomena;
- c) Examples of harmonious landscapes formed in the process of historical traditional land use in the given biome;
- d) Changed and degraded landscapes where it is still possible to restore the natural state.

This list, provided by the Law, is incomplete and unsatisfactory. Although UNESCO concept allows some freedom and flexibility, this does not permit the national legislation to ignore the obligation of foreseeing all the cases. The definition envisaged by the Law lacks precision which is necessary for its practical application.

While establishing the national legal basis one should envisage that the creation of a BR serves the purpose of development and protection of the following types of territories¹³:

- a) Territories consisting of diverse ecosystems representing a significant biogeographic system including the gradation of anthropogenic impact;
- b) Territories that are important with regard to the protection of biodiversity;
- c) Territories that enable sustainable development, research and demonstration of results;
- d) Territories, the size of which makes it possible to achieve the aims of the BR.
- e) The territory should fulfil the above-mentioned functions based on its zoning (for zoning, see Chapter 4).

¹³ UNESCO Statutory Framework, Article 4

The analysis of UNESCO documents on biosphere reserves makes it clear that the norms for the selection criteria of the territory of biosphere reserve are imperfect and need to be refined.

3. The Procedure of Formation of a Biosphere Reserve

The Law does not provide appropriate definition of the procedure of formation of a BR. It does not define regulations for the presentation of the territory by the national government. According to Article 10, one of the preconditions for approving a selected territory as a BR is the recognition of the given territory by the International Coordinating Council of the UNESCO MaB program. The law should settle the decision-making procedures, especially involvement of all stakeholders in the process. The legal mechanisms related to deprivation of the status should also be settled.

The law should regulate the mechanism of implementation of obligation under UNESCO Regulation, Article 9, according to which an authorized person of a national State has to submit reports every 10 years, based on the criteria defined by Article 4 of the above-mentioned document. This mechanism enables us verify to what extent the selected territory corresponds to the granted status. If any shortcomings are indentified, the State is given recommendations, envisaging its cultural and social-economic peculiarities, to implement activities in order to meet the requirements under paragraph 4. The International Coordinating Council (ICC) may inform UNESCO Secretariat regarding the assistance to the national State with reference to the problem. In case the national State fails to eradicate the shortcoming, the territory is deprived of the status.

For the establishment and functioning of a BR it is important to define the legal status of the reserve as an entire territory and its zones. In accordance with UNESCO requirements, it is vital to legally designate the core zone of a BR. The aim of establishing and functioning of the entire BR and its separate zones should be clearly defined by the law.

This is not necessary, and UNESCO does not demand that the entire territory have a unified legal status. It may consist of territories under different categories, but have a core zone i.e. the zone of strict protection of nature. The main thing is coordinated management of the entire territory. The management/policy document should define the relation between the involved private or public entities. It should also define the agency responsible for decision-making. In case the law defines a BR as a special category, the territory is granted this status in accordance with the law.

The same can be said about protection mechanisms. It is not necessary for the entire territory to have the same legal status as the strict protection zone. It would be even contrary to the UNESCO concept, as the zonation concept for a BR foresees a gradation of human influence and intervention. The gradient from conservation to development is expressed in the three zones. This does not mean that the rules defined for the management of BR, aimed at avoiding negative impact on the environment, will not apply to the buffer zone or other zones. As it was mentioned, it is vital to view a BR as a unified territory, the protection of which should be

implemented based not only on legal norms, but on the interests of sides acting within agreement relationships.

The definition of the status of the core zone should not lead to deterioration of the protection regime granted to this territory. Naturally, legal settlement of the issue is not enough, and other tools should be used, such as corresponding strategies and programs and other decisions in the form of acts subject to the law.

In accordance with the UNESCO concept and within the freedom of selection of the status of the territories of the biosphere reserve, the legislator should clearly define the procedures of granting or withdrawing the status of a biosphere reserve to the territory.

4. The Structure of the Selected Territory

The Law defines the structure of a BR. It may consist of the following key zones:

- a) The core zone, or the zone of strict protection of nature;
- b) Buffer zone, or manageable protection of nature (manipulation zone);
- c) Restoration zone;
- d) The zone of traditional cultural landscape.

The structure and the contents of each single part are rather vague and do not meet UNESCO criteria. Protection of nature is an objective of the BR. However, it should be in harmony with the needs of the population and sustainable economic activity and development. In order to achieve this, according to UNESCO, a BR is divided into three zones: core territory, buffer zone and transition zone.

Article 16 of the Georgian Law defines the issue of formation of additional (buffer) zone of a PA. According to this Article, additional (buffer) zones are formed around PAs, national parks, monuments of nature, managed reserves and protected landscapes upon necessity, whereas buffer zones are obligatory in case of BRs. Additional zones are formed based on the category of territory of multiple use defined by the same Law. They support balanced activities aimed at environmental protection and sustainable development, as well as at generating local finances. There are clear discrepancies between Article 16 and Article 10 of the Law. It should be mentioned that the buffer zone of a protected territory cannot be identified with the buffer zone of a BR, as the two are based on different concepts. On the legislative level, they should be treated as separate issues within separate norms.

Article 10 describes the activities permitted in each zone:

- a) Only scientific observation is permitted for the core zone, or the zone of strict protection.
- b) Research, environmental protection and restoration activities are permitted for the zone of manageable protection of nature.

- c) Protection and restoration of territories damaged as a result of anthropogenic impact is allowed in the restoration zone.
- d) Traditional agricultural use of natural resources is allowed in the zone of traditional cultural landscape.

The regulation defined by the Law is strict. It does not correspond to UNESCO standards. For instance, only scientific observation of the core zone is unreasonable (UNESCO 1996).¹⁴

Despite the flexibility of UNESCO documents, Georgian legislation should envisage UNESCO approach to zoning and clearly define the content of each selected zone based on UNESCO criteria.

Georgian legislation is not obliged to copy the attitude of UNESCO and apply the three-level system of zoning. However, the attitude defined by the national legislation should correspond to the content of each selected zone as well as UNESCO criteria. This is important in view of cooperation with the network of BRs. The major requirement is to identify the core territory, which must be a PA aimed at long-term conservation of biodiversity, research, education and other activities with less impact (UNESCO 1996). As for other zones, the national legislation is, to a certain extent, free in the selection of these. The aim of buffer zone is to protect the core territory, as it surrounds the core zone and is used for ecological, recreational, eco-tourism and research activities. The transition zone is a place of cooperation between local community, management authorities, scientists, NGOs and other interested parties. The aim in this case is to use the territory for agriculture, housing, economic activities and other similar purposes, based on the principle of sustainable management of resources.

Legislative regulation of zoning of a biosphere reserve and the definition of the criteria for allowed activities should take into account the local peculiarities.

5. Selected Territory versus Protected Area

According to Article 10 of the Law, a BR may embrace one or more categories of PAs (strict nature reserve, national park, monument of nature, managed reserve, protected landscape, territory of multiple use).

This attitude corresponds to UNESCO criteria. However, the list given in the Law is not exhaustive. It does not exclude other possibilities. Thus, a territory may be part of the Emerald Network or a special bird PA. International experience has proven that some states have created independent legal bases for BRs. In case of other states, the core zone and buffer zone (entirely or partially) are PAs based on the national legislation, or an international network, such as World Heritage or RAMSAR territory. The key requirement is that the establishing of BR should not affect the existing protection regime of the territory.

¹⁴ Please see the Seville Strategy and Biosphere Reserve framework document <https://www.unesco.de/infothek/dokumente/konferenzbeschluesse/sevilla-strategie.html>

The UNESCO concept of biosphere reserves does not strictly define the relationship between the selected territory for a BR and the status of the national or international protected areas. The concept enables a wide range of solutions. The Georgian Law on the system of protected areas should clearly define the attitude of the national legislation to the status of biosphere reserve and the status of a protected area.

6. Property Rights

According to Article 12.5. of the Law, the territory of the core zone of a BR and the natural resources on this territory represent State property. It is inadmissible to transfer the use of natural resources of this zone. The territory of a BR in the manageable protection zone and the natural resources on this territory, including migrating livestock, represent State property. The territory of restoration and traditional-cultural landscape of the BR and the natural resources, natural-cultural and historical-cultural objects on this territory, represent State property, but, according to current legislation, other forms of property are also allowed.

This formulation provided by the Law is unacceptable. The territory selected as BR should not be solely State property. There must be a legal basis allowing the management of the territory by local self-governance authorities or private owners.

The Seville strategy enables a wide range of attitudes to property issues. Based on the international practice, the core zone is the property of public authorities, although it can belong to private persons or NGOs. The buffer zone may also be owned by private persons or local community. This is also true for transition zone.

The UNESCO concept of biosphere reserves allows the discretion of settlement of the issue. Due to the flexibility of the concept, the Georgian law should allow certain freedom of forms of property regarding the territory selected as a biosphere reserve.

II. Reform Proposals

The strength of the UNESCO program of BRs is its flexibility and creativity, which enable to adjust it to the peculiarities of a given State. The reform aimed at the establishment of BR in Georgia should answer significant questions. First of all, based on the international experience, the question of legal regulation arises. Taking into account the legislative traditions of Georgia, we can conclude that the establishment of a BR is possible only on condition of a legislative regulation of the issue. Otherwise it will lack support and feasibility.

Another question is whether the Georgian law on the system of PAs is complete and appropriate. The answer is negative: this law has many shortcomings and gaps.

In view of legislative regulation of the issue, it is recommended to single out three alternatives:

1. Regulation of the issue based on the Georgian Law on the System of PAs,
2. Regulation of the issue based on the Law on the Protection of Biological Diversity
3. Regulation of the issue by means of a separate law on BRs.

1. If we attempt to regulate the issue based on the Georgian Law on the System of PAs, the community might feel that the aim of a BR is to protect the territory and impose certain restrictions. The very name of the law and the emphasis on environmental protection will overshadow other important aspects of a BR.

2. The issue might be regulated based on the Georgian Law on the Protection of Biological Diversity. According to the current draft, this law defines the legal basis for the protection of species, habitats, ecosystems and landscapes, the use of wild plants and animals, international trade, genetic resources and availability of traditional knowledge, equal distribution of profits gained from the use of the above-mentioned resources etc.; according to the draft, the aim of the law is to ensure protection and restoration of wild plants and animals, ecosystems, species and habitats. The law is to ensure sustainable use of plant and animal objects based on the needs of contemporary and future generations, as well as the availability of traditional knowledge and equal distribution of profits gained by the use of these resources.

The above-mentioned allows for additions defining the legal basis for the formation of BR.

Since the law embraces not only the protection of biodiversity but also the use of wild plant and animal objects, it may regulate legal issues related to the formation of a BR. Based on the general grounds established by the law, it is possible to form concrete reserves on the basis of corresponding regulatory acts worked out by the government.

This proposal does not imply withdrawal of regulatory norms from the Law on the System of PAs. The above-mentioned law should completely regulate a concrete issue – the relation between BR and the system of PAs.

3. In case a separate law is worked out regarding BRs, the legislation will have to repeat the articles related to the protection of biodiversity. We cannot deny the fact that protection of biodiversity is one of the key purposes of a BR. If the law defines issues related to biodiversity, the public will not understand why an application tool like BR does not fall within the given law.

A positive side of elaborating a separate law on BRs is independence from the Ministry of Environmental Protection. All purposes of a BR would be equally represented in the law, and the law would be applicable not only to the Ministry of Environmental Protection, but also to all the interested parties (e.g. the ministries of economy and agriculture, as well as local self-governance authorities). We cannot deny the fact that the leading role in the implementation of the project should be played by the Ministry of Environmental Protection and Natural Resources, as the latter has to integrate the concept of BR within other environmental protection tools. This will lead to the correspondence between the aim of utilization of the territory and the aim of protection of biodiversity.

III. Authorized Administrative Body

According to the UNESCO concept of BRs, it is necessary to carry out organizational activities ensuring the cooperation between local self-governance, local community and stakeholders in the definition and implementation of functions of the BR.

Envisaging the attitude of UNESCO and international experience, the management of BRs should be implemented by local “Self-governance agency of BR” under the supervision of the authorized administrative unit of the corresponding municipality. Local stakeholders should be represented in the above-mentioned self-governance agency of the BR. The administrative agency should have legal tools for the management of the selected territory aimed at sustainable development. It should have appropriate political support from the central government.

The authorized administrative agency should coordinate activities defined by the management plan/policy document; it is also responsible for supporting the negotiations aimed at agreements between interested parties, especially regarding the buffer zone.

Local community and other stakeholders should be involved in the nomination and management of the territory.

There should be efficient tools ensuring the involvement of stakeholders in the decision-making process. Local self-governance, local communities dealing with environmental protection and the protection of cultural heritage, the agricultural sector, tourism sector, construction sector, political parties, civil society and the scientific sector should be involved.

Alongside with the rights of management of BRs granted to the local self-governance agency, based on the management culture in Georgia, it is suggested that, in order to form and manage a BR, the law should define an obligation to establish a government committee of the BR. The committee should consist of representatives of the ministries of economy and sustainable development, environmental and natural resource protection and agriculture, as well as independent experts from the corresponding fields. The legislation should allow legal guarantees for the involvement of local self-governance units in the work of the Committee.

One of the major functions of the Committee will be the elaboration of a proposal for the government concerning the granting of a status of a BR to a certain territory. The executive committee may be an administrative body responsible for the BR. It should support the implementation of plans and strategies related to the BR; it should work out tools for the regulation of the use of resources in the buffer zone and other activities.

On the level of local self-governance also regional information centres may be established. This will help support the local community and increase the awareness, as well as their involvement in the decision-making process.

IV. Other Tools

The Georgian Law regulating BRs should deal with the procedures of formation, especially the selection of the territory and its representation procedure based on public administration rules.

There must be a permanent mechanism of cooperation with the community (informing the community).

The administrative body responsible for the BR should work out a strategy that will ensure civil education and professional training in the field.

Results of the research carried out within the BR should be subject to mechanisms ensuring their availability and protection of intellectual property rights.

In order to establish a BR, a biogeographical analysis of the country's territory should be carried out. This will enable identify endangered and vulnerable ecosystems to be involved in the program.

BRs should fall within the spatial planning of the country. A BR should form part of biodiversity protection plan.

UNESCO, as the Secretariat of the world-wide network of BRs, is responsible for the functioning of this network. The Secretariat takes care of communication and cooperation between separate BRs and experts. Within UNESCO, there is a unified informational network. The National Committee of MAB plays an important role in the implementation of the aims of this network. The function of the national Committee is to work out guidelines regarding the criteria of selection of territories for BRs, elaborate concepts regarding sustainable management of BRs, deal with civil education and professional training issues, carry out evaluation of BRs, and, in cooperation with MAB UNESCO agencies, implement other important functions aimed at the objectives of BR.

V. Conclusion

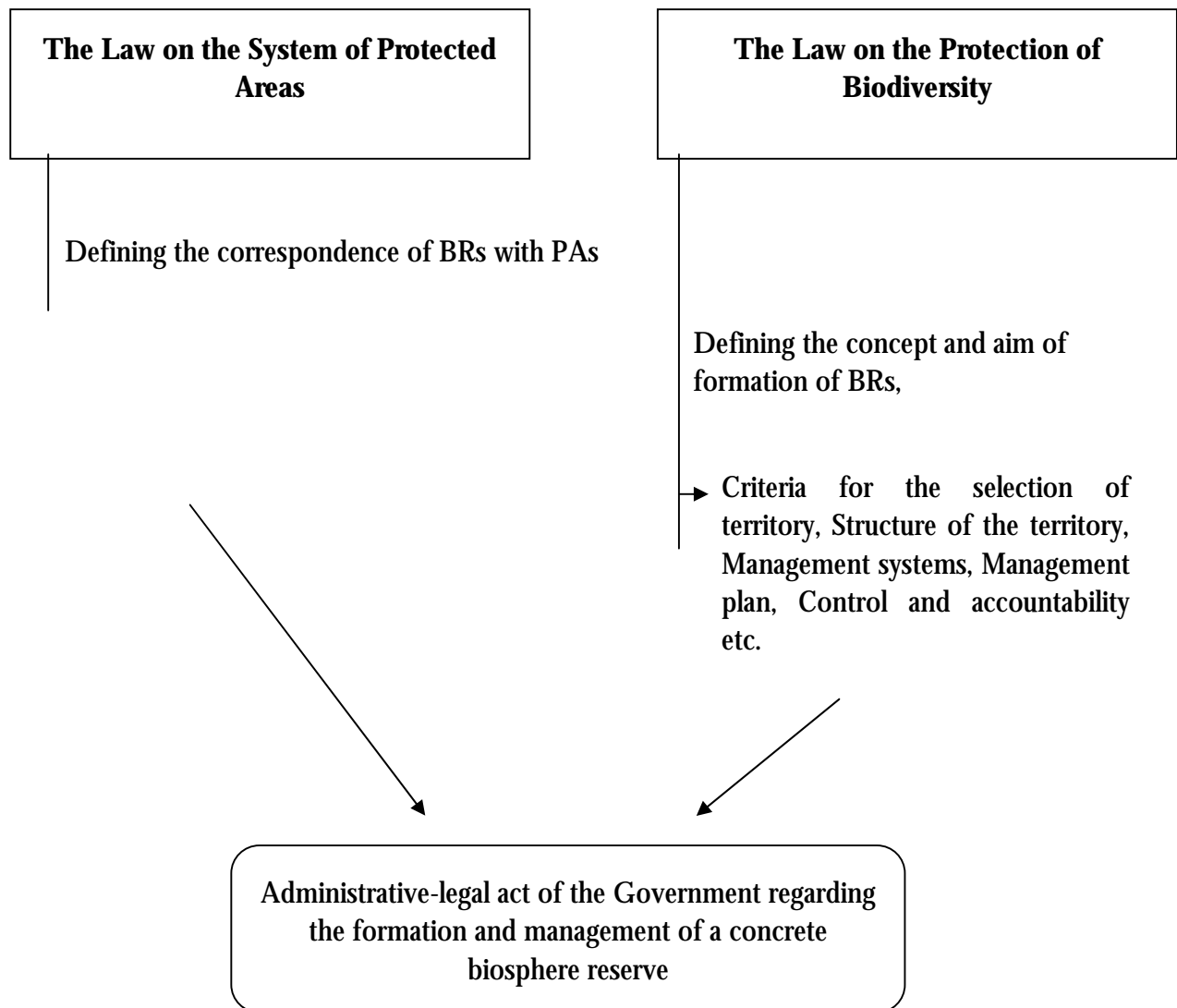
In order to establish BRs in Georgia, it is necessary to work out appropriate legislative and administrative instruments to be applied alongside with public awareness and community involvement activities.

Currently there are certain shortcomings regarding the settlement of the issue. The Law on Biological Diversity should form a legislative basis for the BRs, whereas the Law on the System of PAs should regulate the relationship between PAs and BRs. A BR should be established on the basis of administrative-legal act issued by the government of Georgia on the basis of current legislation.

The law should allow for free space of action for alternatives related to forms of property or zoning of the territory. This will enable select the most appropriate version based on local peculiarities.

It is highly desirable to study and envisage legislations and management schemes of different countries regarding BRs.

Suggestion: Legal basis for the formation of a Biosphere Reserve



Annex 6: Proposition for a model law on biosphere reserves

(from Bonnin and Jardin 2009)

ARTICLE 1 - DEFINITION

CHAPTER 1 - DESIGNATION OF BIOSPHERE RESERVES

ARTICLE 2 - CRITERIA FOR DESIGNATION

ARTICLE 3 - PROCESS OF DESIGNATION

ARTICLE 4 - NATIONAL NETWORK OF BIOSPHERE RESERVES

CHAPTER 2 OBJECTIVES OF BIOSPHERE RESERVES

ARTICLE 5 - FUNCTIONS

ARTICLE 6 - EDUCATION

ARTICLE 7 - MODELS OF SUSTAINABLE DEVELOPMENT

ARTICLE 8 – RESEARCH

CHAPTER 3: TERRITORY OF BIOSPHERE RESERVES

ARTICLE 9 - ZONATION

ARTICLE 10 - PUBLIC AND PRIVATE SECTOR

ARTICLE 11 - INTEGRATION INTO PROTECTION AND DEVELOPMENT POLICIES

CHAPTER 4 - INTEGRATED MANAGEMENT OF BIOSPHERE RESERVES

ARTICLE 12 - INTEGRATED MANAGEMENT POLICIES FOR BIOSPHERE RESERVE

ARTICLE 13 - AUTHORITY OF MANAGEMENT OF RESERVE

ARTICLE 14 - A UNIFIED NATIONAL POLICY

ARTICLE 15 - POLICY REVIEW

Considering:

That biosphere reserve territories constitute privileged sites for the application of the principles of international environmental law;

That the establishment and management of biosphere reserves must be guided by the Seville Strategy principles;

That complementarity between biosphere reserves and other systems of protected areas must be sought;

That the adaptive management of landscapes and seascapes constituting biosphere reserves implies that policy leaders, decision-makers, scientists and resources managers, as well as local communities and other local stakeholders, are continuously learning from their individual and collective efforts to associate conservation and sustainable use of biodiversity and to maintain ecosystem services. .

The Parliament adopts the present law related to [national] biosphere reserves.

Article 1 - Definition

Biosphere Reserves are areas of terrestrial and coastal/marine ecosystems or a combination thereof, which are established to promote a well-balanced relationship between human beings and biosphere and to provide an example of this well-balanced relationship.

Chapter 1 - Designation of biosphere reserves

Article 2 - Criteria for designation

General criteria for an area to be qualified for designation as a biosphere reserve:

1. The area must encompass a mosaic of ecological systems representative of major bio-geographic regions, including a gradation of human intervention.
2. The area must be of significance for biological diversity conservation.
3. The area must provide an opportunity to explore and demonstrate approaches to sustainable development on a regional scale.
4. The area must have an appropriate size to serve the three functions of Biosphere Reserves as set out in Article 5.

Article 3 - Process of designation

Biosphere Reserves are designated by the national administrative body responsible for conservation of nature, environment or land development by a legally binding text after consultation of the local authorities 2 on which the concerned territory depends.

Article 4 - National network of biosphere reserves

This process has to be more detailed, in particular as for the nature of text but as these provisions vary from one country to another, it is preferable to complete it on a case by case basis. Biosphere Reserves are integrated into a National network of biosphere reserves, the objective of

which is to promote exchanges of experiences and the emergence of a common understanding of sustainable development.

Chapter 2 Objectives of biosphere reserves

Article 5 - Functions

Biosphere Reserves constitute tools of adaptive and integrated management that aim to associate conservation and sustainable development. They combine the three following functions:

- 1) Conservation: Contribute to the conservation of landscapes, ecosystems, species and genetic variation;
- 2) Development: Foster economic and human development, which is socio-culturally and ecologically sustainable.
- 3) Logistic support: Support for demonstration projects, environmental education and training, research and monitoring related to local, regional, national and global issues of conservation and sustainable development.

Article 6 - Education

Environmental education, and education for sustainable development, forms an integral part of the strategy to be implemented in biosphere reserves.

Environmental education must aim to:

- Respect natural and cultural heritage,
- Favour responsible relationships with the environment and, through knowledge
- Acquisition, better land-management.
- Create citizens who are aware of their responsibilities to future generations.

Article 7 - Models of sustainable development

Competent authorities for the management of biosphere reserves endeavour to use biosphere reserves as sites for exploration and demonstration of conservation and sustainable development approaches at a local scale.

They also endeavour to identify and encourage activities compatible with conservation objectives, through the transfer of appropriate technologies and the integration of traditional knowledge, in order to promote sustainable development in buffer and transition zones.

Article 8 – Research

Development of interdisciplinary and innovative research tools for biosphere reserves is encouraged in order to improve tools for adaptive management of these territories.

Biosphere Reserves participate in national and local environmental monitoring programmes. Long-term scientific monitoring put in place in biosphere reserves constitutes a tool for adaptive management.

Chapter 3: Territory of biosphere reserves

Article 9 - Zonation

Biosphere Reserves must fulfil their functions regarding conservation, development and logistic support through an appropriate zonation including one or several core area(s), one or several buffer zone(s) and one external transition area. Zonation must reflect the long-term conservation objectives and take into consideration ecosystems services.

1) Core areas

- Their primary function is the long-term protection of the environment and biological diversity according to the conservation objectives of the biosphere reserve, and they must be of sufficient size to meet these objectives.
- They are comprised of legal terms, which may or may not pre-exist at the creation of biosphere reserves.
- Certain activities are expressly forbidden within these zones. They are listed through regulation when the zonation of the reserve is decided.

2) Buffer zones

- Their primary function is to reduce as much as possible the negative effects of human activities in core areas by protecting the ecological functions of the territory.
- They are clearly identified around the core areas or areas contiguous to these.
- Only activities compatible with the conservation objectives can take place in these zones.
- Activities that are forbidden or subject to a prior authorization are defined according to regulations.
- Provisions favourable to maintenance of the ecological connectivity must be taken inside these zones with the goal of maintaining regular or exceptional migrations of species, as well as the necessary genetic exchanges.

3) Transition area

- The primary function of these cooperation and multiple-use areas is to contribute to the sustainable development of local communities.
- The practices of sustainable exploitation of resources are favoured and developed in these areas.
- Activities that are forbidden or subject to prior authorization are defined according to regulations.

Article 10 - Public and private sector

The territory of biosphere reserves can be partly or wholly a public or a private property.

Article 11 - Integration into protection and development policies

The existence and the objectives of biosphere reserves must be clearly integrated into documents related to the conservation of nature, into national and regional development policies, as well as into land development projects and documents.

Chapter 4 - Integrated management of biosphere reserves

Article 12 - Integrated management policies for biosphere reserve

1) An integrated management policy for the entire area of the biosphere reserve must be developed with the aim of forming a comprehensive project of sustainable development for this concerned territory.

2) The objectives of the policy are the following:

- To identify factors that contributes to the degradation of the environment and non-sustainable use of biological resources, and to take appropriate measures.
- To evaluate natural products and ecosystem services and, based on these evaluations, to promote ecologically healthy and economically viable means by which local communities can benefit from them.
- To determine management challenges and objectives for the duration of policies put in place.

3) Management plans must be provided for core areas, in accordance with their governing texts.

4) Public authorities, local communities and the private sector are informed and should participate in the procedure for the elaboration and review of the biosphere reserve integrated management policy.

5) The procedure of development and revision of the integrated management policies of the biosphere reserve allows the information and the participation of the public authorities, the local communities and the private interests.

Article 13 - Authority of management of reserve

1) An institutional structure must be developed to manage, coordinate and integrate reserve programs and activities.

2) This structure is meant to serve as a framework for local consultation. Economic and social stakeholders, private and public stakeholders, as well as other interests must therefore be represented within the structure (for example, agriculture, water and forests, hunting and harvest, water and energy supply, fishing, tourism, leisure, and research).

3) The structure can be of public or private legal nature.

4) The biosphere reserve management authority must be consulted on projects or programs that may affect biosphere reserve territory.

5) The management authority can be composed of two related organs working cooperatively:

- A governing board that regroups various stakeholders,

- A scientific board that particularly seeks to promote interactions between research and policy management.

Article 14 - A unified national policy

In addition to the internal policies of each of reserve, a national policy must be put in place that differentiates biosphere reserves from other conservation tools, ensuring national communication and facilitating the functioning of biosphere reserves within a network for exchange of experiences and valuation of information.

Article 15 - Policy review

The redefining of management policies is an opportunity to review biosphere reserve objectives and to translate them into zonation. It should take into account various biosphere reserve characteristics, notably those related to the conservation of biological diversity, management approaches that allow adaptive and integrated management and governance modalities that promote the role of local communities.

This exercise must be carried out in cooperation with all concerned parties, according to methods that should be determined in advance.

Optional: Additionally, biosphere reserves that are recognized by UNESCO's International Council of MAB are also subject to a periodic review every ten years following procedures established by UNESCO.

Annex 7: Strategies for selected priority problems in Akhmeta and Kakheti

(identified during stakeholder workshop with local community and NGOs in Alvani, Akhmeta, February 2016)

1. Problem: Rules of traditional land and forest use are no longer applied, especially in regard to grazing (conservation)
 - a. Union of land users (to discuss problems and develop solutions)
 - b. Map of land use (to identify boundaries of villages, pastures, field, roads...)
 - c. Restoration of traditional pasture use system
 - d. Introduction and enforcement of regulations on land use
 - e. Identification of boundaries of village lands
 - f. Identification of categories of lands in Tusheti (pasture lands, croplands etc.)
 - g. Support of restoration of traditional agriculture (haylands, fields etc.)
 - h. Better communication and more cooperation of people with decision-making agencies in charge of land use (there are serious problems), they have to take more responsibility and action
 - i. Trainings for personnel in the agencies and decision-makers dealing with land use to enhance their capacities
 - j. Introduction of modern methods of land use/pasture use (anti-erosion, sustainable grazing, electric fences?)



Picture 6: Presentation of ideas for strategies during a stakeholder workshop with NGOs and CBOs in Alvani, February 2016 (Photo: Sophie Hirschelmann)

2. Problem: Lack of infrastructure (sustainable economic development)
 - a. Attract investments
 - b. Cooperation with authorities
 - c. Infrastructure management plan
 - d. Improve legislative basis, fill gaps (many problems here, e.g. regulation of forest use in Tusheti)
 - e. Qualified personnel
 - f. Advertising, marketing, promote Tusheti as attractive place
 - g. Optimization of production
 - h. Involvement of local community
 - i. Implementation of infrastructure projects
 - j. Spatial management plan

3. Problem: Low awareness of the population and lack of information (education)
 - a. Regular meetings with local population
 - b. Brochures
 - c. Increase awareness of all age groups
 - d. Formation of initiative groups
 - e. Publishing of local newspapers
 - f. Television and internet
 - g. Training of personnel